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Southern Medical Journal

Journal of The Southern Medical Association

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ORIGINAL ARTICLES

Management of Carbohydrates in Infant Feeding. By Lewis W. Elias, Asheville, N. C. 431

Management of Proteids and Fats in Infant Feeding. By A. W. Calloway, Asheville, N. C. 434

Remarks on Chronic Splenic Anaemia, Bantis Disease and Allied Conditions. By J. B. McElroy, Memphis, Ten. 436

Treating Gastro-Intestinal Tract in Pellagra. By Clarence C. Elebash, Selma, Ala. 447

Pellagra. By R. E. Sylvester, Tylertown, Miss. 449

Rational Psychotherapy. By Robert S. Carroll, Asheville, N. C. 451

The Negro, a Public Health Problem. By C. E. Terry, Jacksonville, Fla. 458

Post-Operative Care of Abdominal Cases. By G. C. Rodgers, Elkins, W. Va. 467

Report of Unusual Cases. By E. D. Holland, Hot Springs, Ark. 473

Nasal Tampon Treatment of Sinus Diseases and Ocular Complications. By J. Ivimey Dowling, Albany, N. Y. 476

Observations on Pellagra. By J. E. Evans, Fulton, Ala. 483

Report of an Interesting Case of Diabetus Mellitus Showing Hookworm Infection. By Wm. W. Dinsmore and P. B. Moss, Montgomery, Ala. 485

Effects of Continued Use of Opiates on the Human System. By W. C. Ashworth, Greensboro, N. C. 487

Surgical Treatment of Goiter. By John R. Wathen, Louisville, Ky. 493

Galveston Autopsies. By G. C. Kindley, Galveston, Tex. 495

Prevention of Deafness. By Joseph B. Greene, Asheville, N. C. 499

Editorials 506-511

Therapeutics 512

Book Reviews 513

Souther Medical News 514

"Chicago Laboratory, 8 N. State St., Chicago, Ill., see Page 17."

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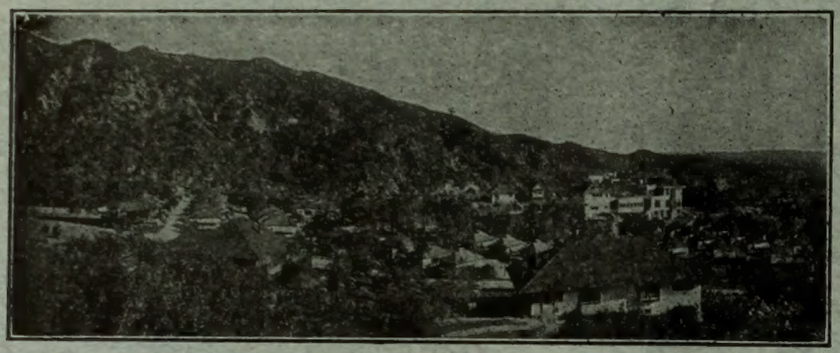

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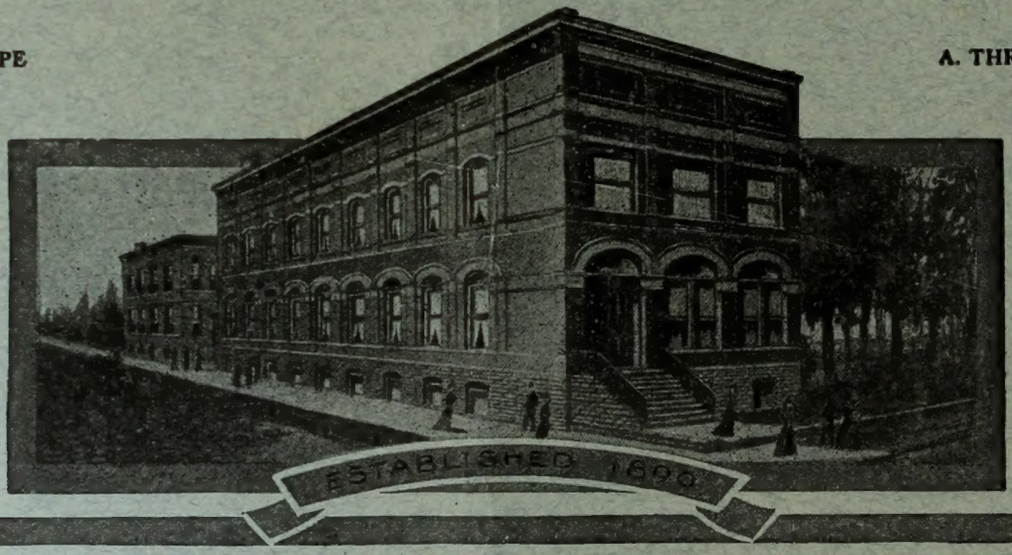

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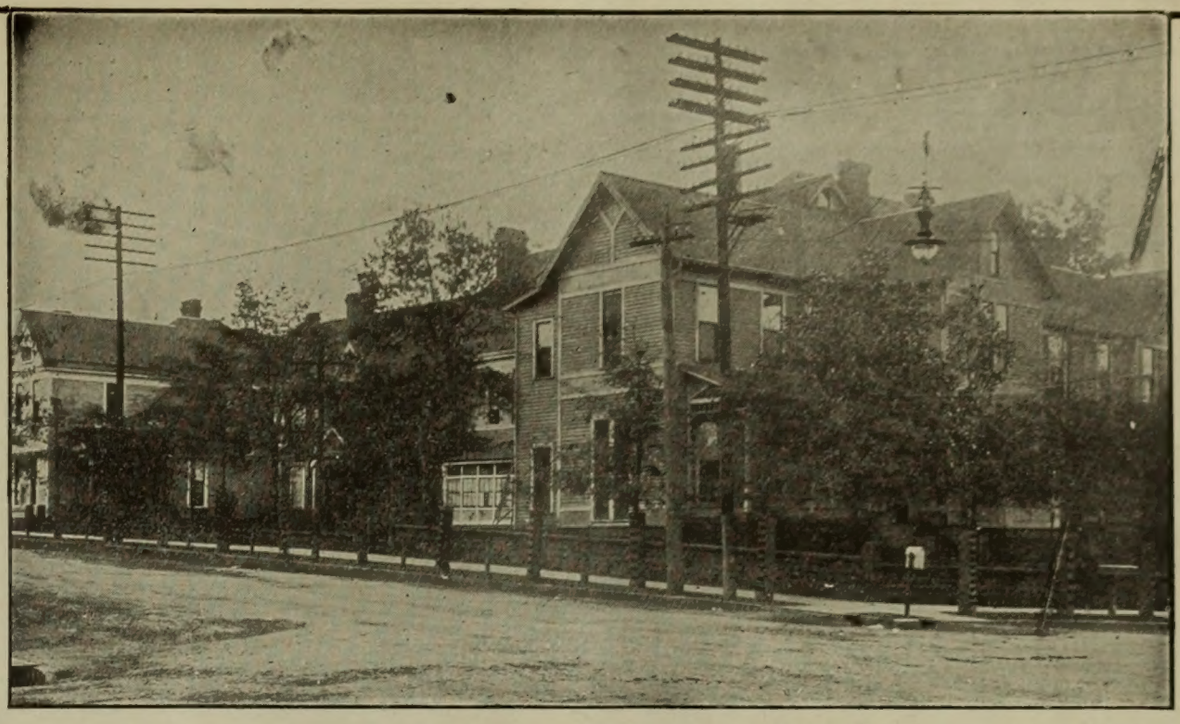

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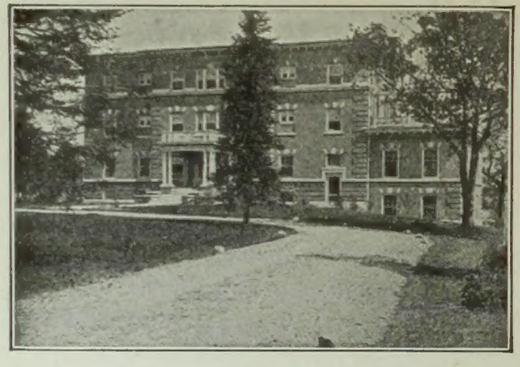

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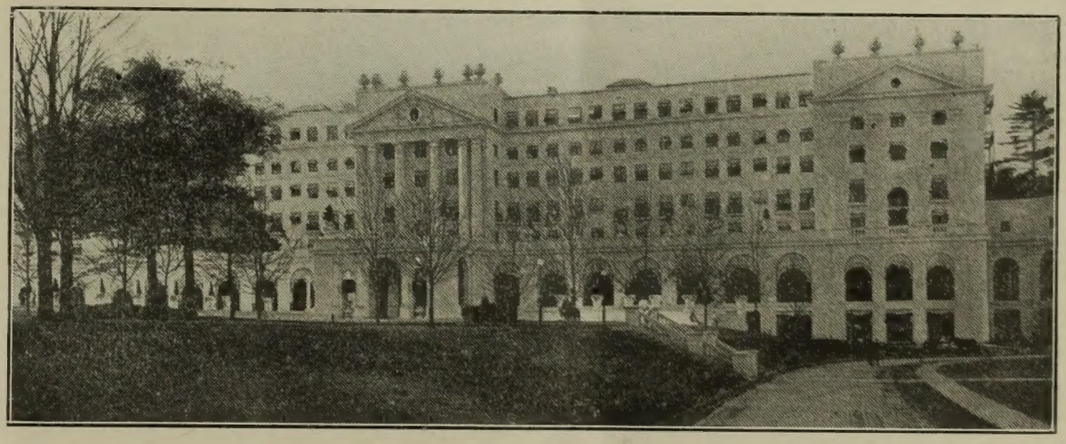

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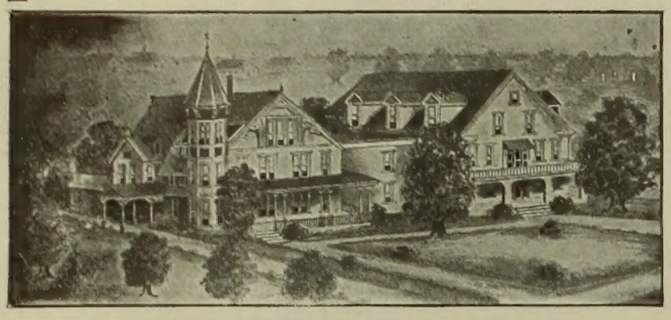

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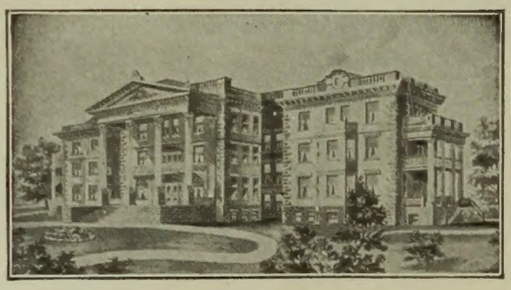

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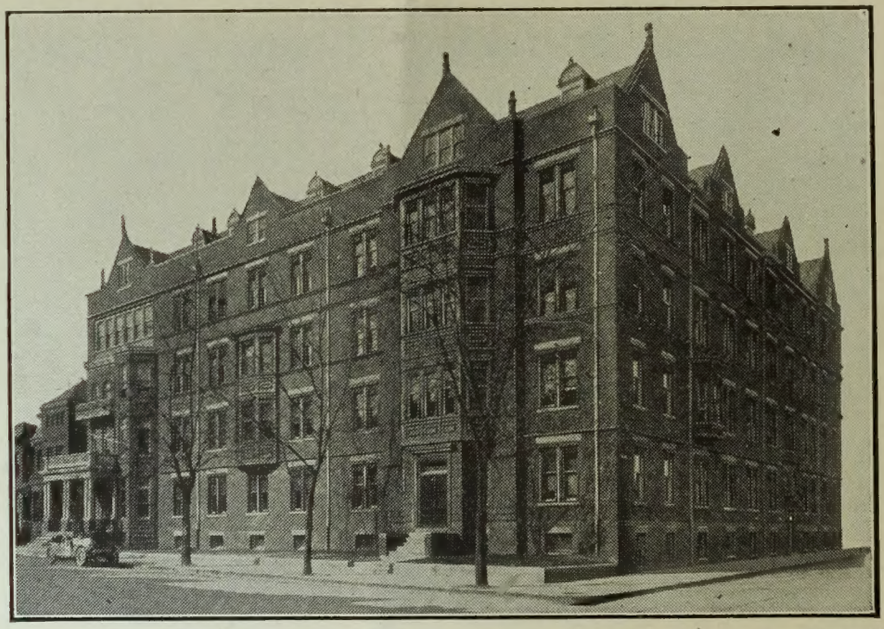

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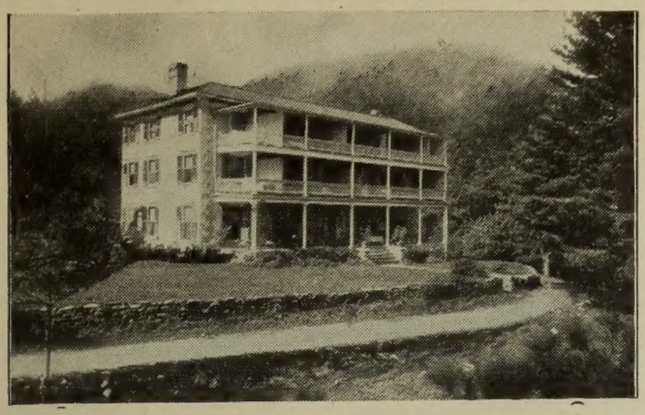

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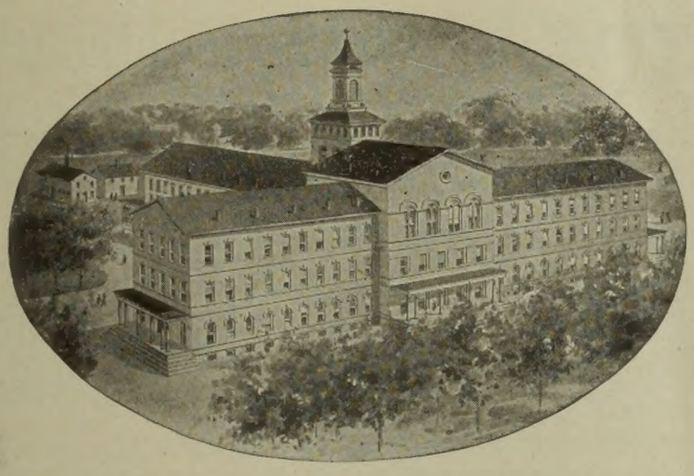

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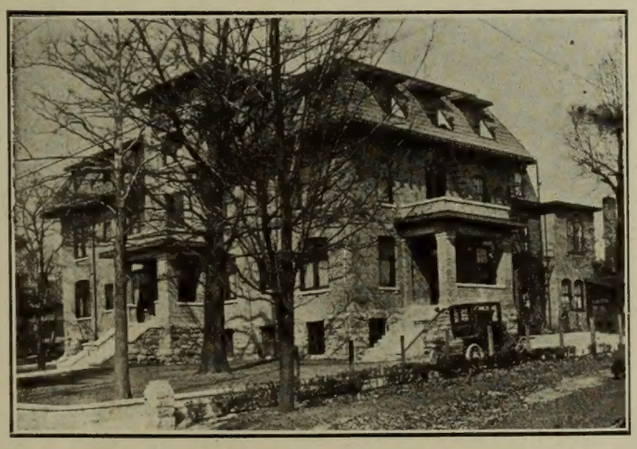

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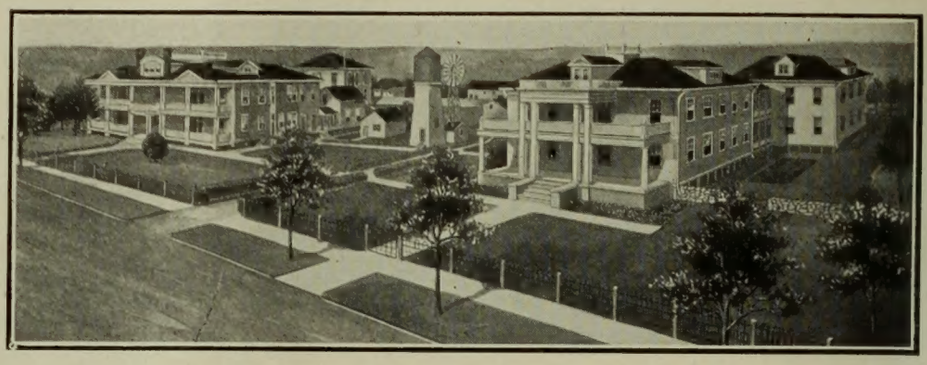

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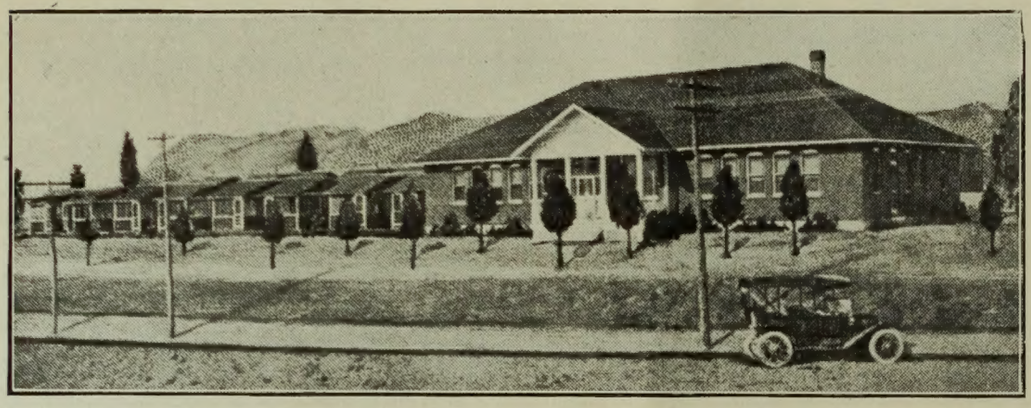

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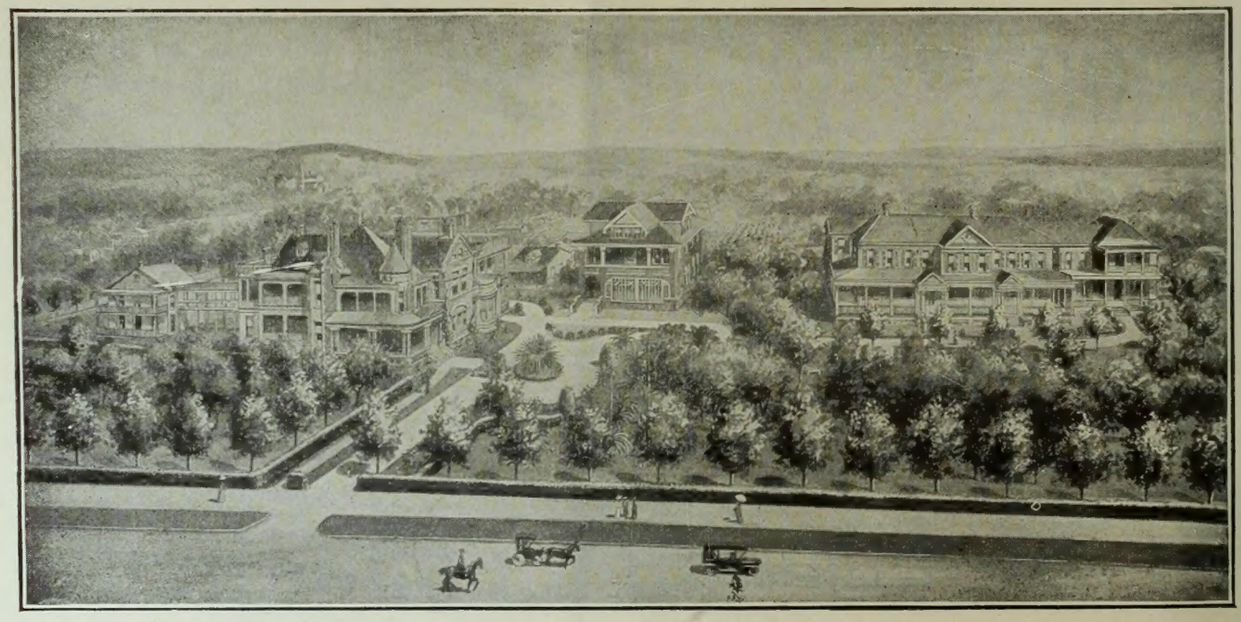

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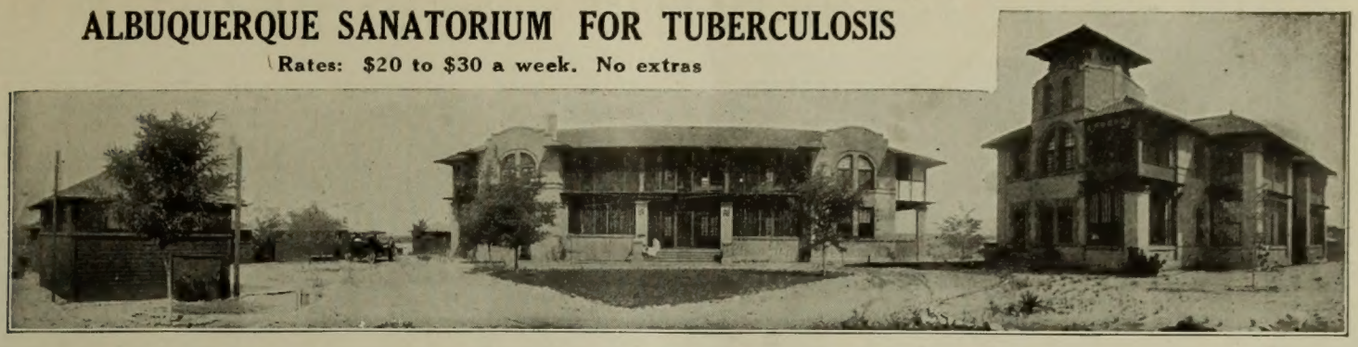

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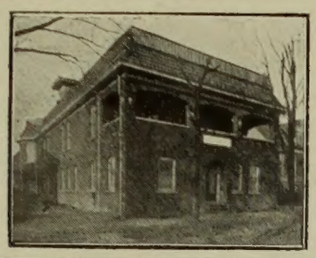

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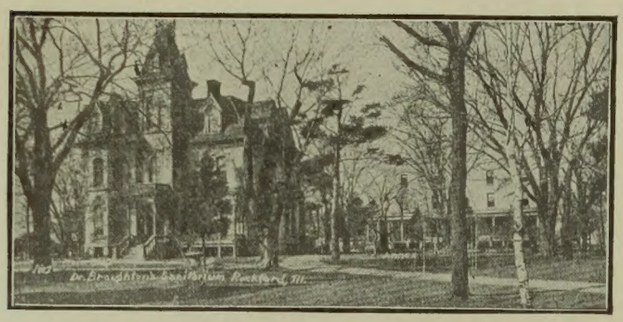

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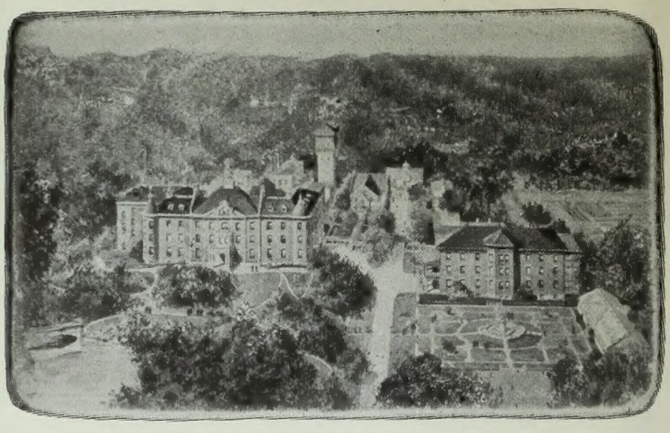

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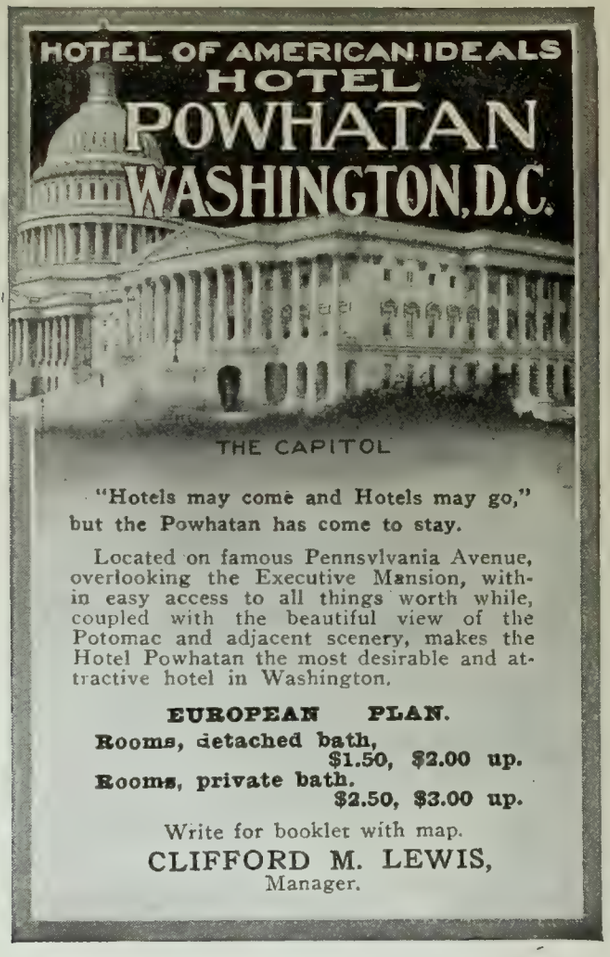

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ORIGINAL ARTICLES

THE MANAGEMENT OF CARBOHYDRATES IN INFANT FEEDING.*

By Lewis W. Elias, M.D.,
Pediatrist to Clarence Barker and Meriwether Hospitals, Asheville, N. C.

This paper is not intended as a guide to the number of ounces of sugar which the particular baby needs, but rather by refreshing your memory concerning the fundamental facts regarding carbohydrates, it is hoped to suggest a more careful, and withal, possibly a little more intelligent handling of the sugars and starches than we sometimes give our feeding cases.

In the history of artificial feeding we have adopted and rejected first one and then another of the food elements in turn. None have escaped their turn of condemnation and of praise. Progress in pediatric feeding has been in circles rather than straight ahead, but each circle has cut a little in advance of the last. On these rounds we have each time learned a little more about the different elements and, viewed as a whole, we have made vast strides from the earliest crude notions to our present position. Therefore, let us examine in brief some of the points at which we have arrived in regard to carbohydrates and their use.

The carbohydrates, or sugars, are essentially energy foods. They are taken into the body as fuel for the human engine. If an excess is consumed it is stored up as potential energy in the form of fat. We need hardly think of the carbohydrates in any other terms than energy. Although the forms differ—including chiefly cane, milk, malt sugars and starch—the energy value of each is about the same, so that if it were not for the difference in digestibility and absorption the results would also be the same regardless of which we used.

In the digestion all must eventually become maltose, and end as dextrose. It is the oxidation in the muscles of this last form, dextrose, that liberates water, heat and the energy for which carbohydrates are ingested. It is easy to see that if the malt sugar, maltose, is the one employed, standing, as it does, next in order to dextrose, its digestion will be simple, the assimilation rapid, so that it is available for use very soon after being taken into the body. It even seems probable that it is absorbed in part directly from the stomach into the blood, there, according to the needs of the case, either to be carried to the liver, which converts it into glycogen, and stores it away as such in liver and muscles, or further changed into fat and stored up in the tissues in this most concentrated form of energy. But if the demand is urgent it is carried directly to the muscles, converted into dextrose and immediately oxidized into the energy that the body is demanding. This explains the well deserved popularity of maltose in recent years, especially for feeding those infants whose supply of energy is low, and whose pressing need is for a quickly available form requiring the smallest expenditure

*Read in Section on Medicine of the Southern Medical Association, Seventh Annual Meeting, Lexington, Ky., November 17-20, 1913.

of the slender store of energy for its digestion.

On the other hand, if we have a thriving baby with a large supply of energy stored up as glycogen and as fat, then there is no haste needed in assimilating its carbohydrate food. Here milk sugar meets the needs of the body admirably. Milk sugar must be split into several successive forms by the enzymes in the intestines, and is thus slowly absorbed into the system. There are distinct advantages in this because, while the malt sugar is absorbed so quickly, it is the most easily fermented of all the carbohydrates, and so most apt to cause digestive disturbances, while milk sugar is slowly absorbed and least fermentable, and so least apt to cause trouble under most conditions. And still further, in the use of malt sugar, if after the immediate demands of the body are met, a large excess of the sugar is rapidly absorbed this may over tax the liver's power to store it away and result in an elimination from the system with alimentary glycosuria. Therefore, in a poorly nourished infant, its energy may advantageously be supplied in two forms: enough of a rapidly absorbable one being given to meet the immediate demand, and the rest of the body's needs for stored up energy fed by one absorbed more slowly and with less irritation. Thus all the demands of the body are met with the least danger of upsetting the digestive system.

Such a change may also meet the indications when we find evidences of fermentation, such, among the more evident ones, as abdominal distention and discomfort, with loose, green, foamy movements that are irritating to the skin. Here it may be necessary to cut down the carbohydrates, or, it may only be necessary to change the form of part of them. We see this illustrated in Keller's malt soup for atrophic babies, where a quickly available energy is supplied in the malt extract, and its laxative effect is counteracted by adding flour. For the starches are also slowly broken down and absorbed and so have a protective action on the intestinal wall. (They, by the way, also probably have a similar protective action against fatty acids in the intestines.) In this particular formula we have energy added by still another carbohydrate in the sugar of the milk. So we find that the employment of polycarbohydrates is fully justified both from the standpoint of expediency and on physiological grounds.

Another point that we sometimes forget is the fact that the digestion of food uses up body energy, just as does the activity of the muscles of the arms and legs. Now if the particular combination of fat, sugar and proteid that we are feeding an infant contains ninety calories, and the digestive effort required of the body uses ninety calories of its stored energy, there is nothing gained by feeding; the baby, after its meal, is just where it was before, so far as its energy content is concerned. Still further, if the digestion of ninety calories of our food called for one hundred calories of body energy, then the body has actually lost, and the more such a food combination is increased in amount the more rapidly will the baby loose in weight. This is not fancy but fact. So we see that simply supplying the required number of calories needed by the body is not sufficient, else coal oil would meet the indications nicely, but they must be in a form whose assimilation does not tax the body's store of energy too greatly.

Bearing this fact in mind not only assists us in making up our food formulas, but illustrates the very important place that the carbohydrates fill. As before stated, they may even be in a form that is absorbed directly into the blood, oxidized in the muscles and returned immediately in the form of energy to assist in digesting the remainder of the food with which they are ingested, so it is as if the food came charged with its own dynamo. From beginning to end they are energy foods available to the body with the least tax upon it. Their place is dramatic among the food elements, for they supply

the power for the varied activities of the body. So their results are rapid and are easily seen.

But, when the foregoing has been said, we have said all. The carbohydrates cannot replace the nitrogenous waste of cell activity nor furnish food for tissue building throughout the body. And the results of neglecting to remember this, in balancing up our food formulas, are daily seen in the arrested development of babies showing impoverished cells and poor resistance, regardless of whether they are plump or emaciated. Trying to conceal this condition with fat does not help our little patient's starved cells, nor, again, are the best interests of the body served when all of its energy is furnished in the form of carbohydrates. It is a fundamental fact that the fats, though absorbed with more difficulty, are indispensable to any permanent and satisfactory body development. It is probably this side of the question—what carbohydrates will *not* do—that needs just as much emphasis as what they *will* do.

It is just here that we see the weak side of that large class of carbohdyrates, namely, the proprietary foods. This paper has no fight to make upon them, provided their composition is understood and they are used accordingly. But the more carefully one goes into his feeding case the more inclined he will be to write his own food formula, just as most intelligent physicians prefer to write their own prescriptions instead of using proprietary medicines.

It is a far cry from the days when the sugar in the food was considered negligible, as producing no disturbance, while proteid was hedged about by every artifice that cunning skill could invent to protect the body from its baneful effects; to the recent times when proteid is held to be harmless and given in large quantities without fear, but sugar, together with the salts, is watched and held responsible for a large part of the digestive trouble. The "food injury" of the Germans charged against sugar is thought to cause most of the grave evils associated with the alimentary tract. Even the worst of all diseases of infancy, summer diarrhea, is held to be of chemical origin arising from damage caused primarily by sugar, not germs. Following this view we have the logical treatment which reduces sugar as far as possible and feeds large amounts of proteid in the form of albumin milk. This view is now widely accepted and employed.

In sharp contrast to this is the method of Kendall. He accepted the germ origin of summer diarrhea, and using as a basis the fact that germs prefer carbohydrate food to proteid, and that from the carbohydrates they can produce no toxins—can only cause fermentation—he gives a pure carbohydrate diet, even injecting solutions under the skin in hope of reaching and surrounding those germs that may have penetrated the intestinal wall, and so stop their toxine production. In a limited number of cases he claims encouraging results.

But neither method can compare with the success claimed by Dr. Clock of New York. His method consists in displacing the intestinal bacteria with lactic acid bacilli. An essential to success, he claims, is that the genuine Bulgarian lactic acid bacilli shall be used, since they pass through the stomach uninfluenced by the gastric juice. These are administered in a sugar solution in which they develop best. The entirely new feature about Dr. Clock's method is that the treatment is carried on without any change from the diet which the infant was on when taken ill. His success, both in private and out-patient cases, was nearly 100 per cent. This method is interesting, aside from its phenomenal percentage of cures, in that it eliminates the usual starvation of the first day or so and this is in line with out latest ideas in treating typhoid. We have all felt that a treatment including feeding from the start should be evolved for summer diarrhea. In a very limited experience with this method last summer I was led to believe that there were large possibilities in it. To see a feverish baby

with frequent green stools containing mucous and blood, and thirty-six hours later to find the temperature almost gone and the stools a normal yellow, free from blood and mucous, with the baby looking as if it were a healthy one, substituted since the last visit, is most striking and impressive.

THE MANAGEMENT OF PROTEIDS AND FATS IN INFANT FEEDING.*

By A. W. Calloway, M.D.,
Asheville, N. C.

One of the most difficult obstacles the essayist had to meet in writing a paper under the above heading was to generalize enough to include its salient points and yet give sufficient detail to meet the requirements of a scientific body of modern physicians. It was suggested, however, by the preceding essayist, Dr. Elias, that we might by combining our subjects throw some light upon the necessity of the manipulation of food composition.

There seems to be no other angle by which could be reached the management of fats and proteids than that of a clinical standpoint. For practical purposes, then, we will consider the subject under certain disturbances in nutrition due to an *excess* of fats or proteids, and other pathological conditions due to an *insufficiency* of fats or proteids in infant feeding. Normally there is an equilibrium in the amounts of food elements under which an infant not only keeps well but develops and thrives. Should the equilibrium be disturbed by an excess or deficiency of either fats or proteids, the conditions resulting therefrom are the ones which I desire to include in this paper, and the correction of this disturbed equilibrium by the management of either fats or proteids is the lesson which I desire to impart.

It would be a loss of time to discuss the merits of normal breast milk. All will concede that this is so far ahead of any other form of feeding and so perfect in its results and so rarely the disturbing factor that we may as well dismiss it. However, it might not be amiss to recommend an analysis of the breast milk when an infant ceases to thrive through no apparent reason, or the impaired health of the mother awakens our suspicions of a poor quality of breast milk.

To have a working basis we should know how much fat, sugar and proteids we are feeding. The normal average has been variously estimated at about 2.90 to 3.68 fat; 1.70 to 3.07 proteids; 4.37 to 5.91 sugar. One of the best methods in analysis is the relative counting of the milk corpuscles. The practice of Friedman, who divides them into three groups, large, small and intermediate, seems most practical.

Having dismissed then the subject of breast milk, I need not argue that cow's milk and its modification is really the ground work of this short paper. I will not burden you with figures of various percentages which few of us remember and all of us invariably look up, and yet one very important estimation must be considered in connection with proteids, namely, for a baby to thrive it must have 1.5 grams of proteids per kilogram daily, even though the caloric estimation may be in excess of daily requirements. The consequence is the sufficient number of proteid calories. These cannot be supplied with either fats or carbohydrates. Such is not the case with the two latter.

Clinically speaking, we may consider that there is a disturbance in the proteid digestion if the following group of symptoms prevail. First, we will describe those where proteids are in excess. Failure to gain in weight, constipation, the presence of large, hard, casein curds in the bowel movements. By the way, it might be well to state that it is not the purpose of this paper to give the test which will distinguish one curd from another; however, we might say that the protein curd is

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usually very foul or putrid, hard, dry and easily broken down. Under the condition of an excess of proteids, the management would consist in increasing the percentage of sugar and lowering that of the proteids.. A considerable portion of these may be given in the form of whey. The casein may be rendered more digestible by adding starch to the food. Again, the milk may be pancreatonized.

We will consider next conditions in which there is an insufficient amount of proteids. Here the main condition would be malnutrition, and if a caloric estimation was made, we would probably find a deficiency. The stool would more than likely be small and hard, with a striking loss of weight and marked debility. A first-grade mother's milk would be the remedy par excellence. In the absence of this there should be a gradual increase in proteids of all kinds.

At this place it might be interesting to say a word in regard to proteids in general. They are the most important constituent of milk, according to many writers. Human milk is made up of lacto-albumin in large amounts and caseinogen in small amounts. Cow's milk is the reverse. You are familiar with the views of Finkelstein and Meyer, who feel that casein can be fed to the very sick in rather large amounts. They claim it stimulates the alkaline secretion, thereby antagonizing acid fermentation. With casein they combat diarrhea, which reverses former theories and dangers.

We will now take up conditions where excess of fats is said to be accountable for the conditions. The most persistent sign of clinical fats is vomiting or its lesser sign, spitting up a portion of food or regurgitation. In addition to this, there is the greasy, shiny stool with the sour odor and the urine smelling like ammonia, and occassionally a rash or eczema. At times constipation prevails and the movement might be white, dry and crumbling. A test would show a large amount of unchanged fat. Morse states that malnutrition even to the point of rickets may result from an excess of fat.

Having pointed out perhaps most of the clinical evidences of excess of fat, it seems most needless for me to say that a reduction in it is the remedy, and making this reduction it is better perhaps to go to a low point, as far as even 1 per cent, and then make additions as rapidly as results would justify. When babies are vomiting it is a safe rule to keep the fats low. Fat starvation is soon manifested by a condition of rickets and one of its earliest symptoms is constipation, in which there is a deficient tone to the bowel. The addition of cream to the food, cod liver oil or kindred products remedies this condition. After indiscriminate feeding cream is added hoping it will build up the baby. If the child is delicate, cream feeding is very apt to cause dyspepsia and greatly impair the digestive power. There must be a distinct indication for the need of fats, and summing the whole matter up, it seems to me that first we must diagnose the particular phase of malnutrition. By clinical and laboratory investigations we must determine the excess or insufficiency of one or more of the elements of food. Without this I could conceive of no successful management. Morse prefers the word malnutrition as describing this rather than chronic intestinal indigestion.

Having arrived at the particular form of malnutrition due to food disturbances, the management of the fats or proteids becomes one of individual prescription. Use can be made of a division of the milk products. At times it may be casein milk after the methods or Finkelstein, or it may be whey, which would bridge us over a certain condition. The early months of infancy as a rule demand a low proteid percentage, and by the use of whey in a modified milk the same proportions of lacto-albumin and caseinogen as in human milk may be simulated.

Quite recently there appeared an article by Southworth in the "Archives of Pediatrics," entitled "The Ammoniacal Diaper and Its Cor-

rection." The contention in this article is that neither the proteid nor sugar, despite the acid fermentation of the latter, causes the increase in ammonia excretion. He contends that the fats through their formation of fatty acids are responsible for it, and furthermore, that by increasing or decreasing the fats at will variations in the ammonia output may be caused. Five cases are cited in which there was an excess of ammonia, or at least the diaper exhibited a strong ammonia odor, and that on this theory the fats were reduced, with a consequent decrease in this ammonia, with an improvement in the condition of the child. It might be added in addition to this increase of fat, it was given the alkaline treatment, neutralizing the fatty acids. Clinically, then, according to this physician, an odor of ammonia would indicate the reduction of fats when feeding cow's milk..

There is one general observation which might be applied in consideration of fats, sugar or proteids in pathological conditions of the intestinal tract, whether the disturbances are functional or anatomical. At least, in adults the rule holds good. Our X-ray experimental work has taught us much of the motor capabilities of digestion. Sugars pass along more rapidly and excite less acid than proteids, while fats subdue hydrochloric acid formation. Should there be any condition in which lumps of casein remain in the stomach it would seem that digestion would be delayed and difficult. Laying aside the question of ultimate digestion, it seems to me altogether reasonable that the proteid element should be decreased.

In conclusion, it seems to me that the subject matter has been generalized to a point where it is of doubtful benefit to you. It is to be hoped that the paper hints at enough to make it practical.

16 *Medical Bldg.*

DISCUSSION.

Dr. F. C. Moor, Tallahasse, Fla.—One important point mentioned is the fact that overfeeding a certain class of babies, instead of causing them to gain in weight, produces the opposite result. Many times it is very difficult to get the family to realize that too much food can make a child lose weight, and yet last summer in three cases I had it was demonstrated that one child after the other had to be kept without the least increase in food for a period varying from three weeks to two months. Whenever there was an effort made to increase the food, particularly the sugar, there was almost immediately a rise of temperature and a loss of weight, many times without any disturbance of the bowels. These were cases of chronic summer diarrhoea. They had been through the acute stage and were in the stage when they should have been convalescing, but were not. All of them, after a variable period of time, regained their digestive balance to the point where the food could be gradually increased, but for weeks in all cases the least increase of food, and we tried all combinations, particularly an increase in sugar, would bring about in a few hours' time a rise of temperature, and the next day the weight record would show a loss of a few ounces. That is a point I would like to impress upon you, that it is an endless fight with the parents when a child is not gaining weight, and yet if the food is increased too soon or without due regard to the effect as shown by a carefully kept weight record, we may do the patient an irreparable injury.

REMARKS ON CHRONIC SPLENIC ANAEMIA, BANTI'S DISEASE AND ALLIED CONDITIONS.*

By J. B. McElroy, M.D.,
Memphis, Tenn.

The term splenic anaemia was first used in 1866 by Gretsel, an assistant of Griesinger, to describe a case occurring in a ten months' old child. The case was characterized clinically by splenomegaly or enlargement of the spleen, marked anaemia, and evidence of moderate rickets. The pathological examination made by Cohnhein showed hyperplasia of all the normal elements of spleen. This case cannot be correlated with either the clinical or pathological concept of splenic anaemia at the present time.

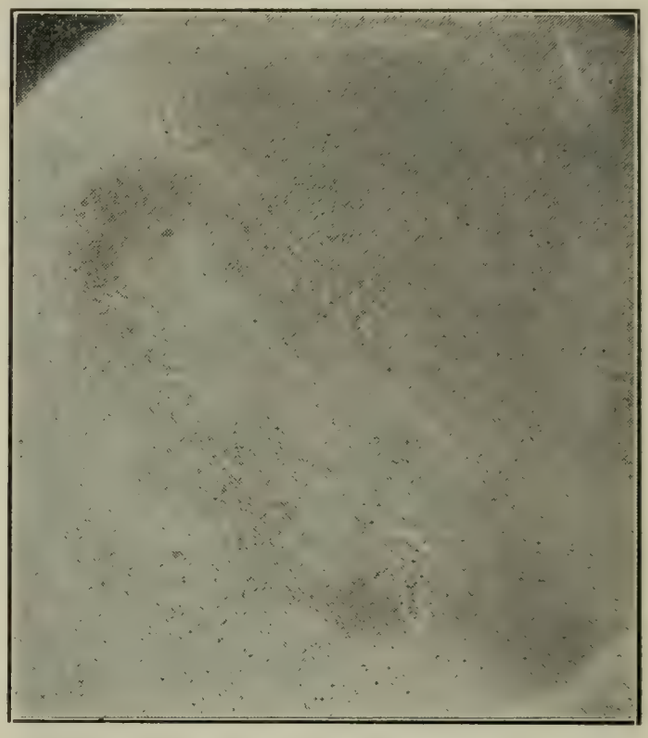
Shortly after the discovery of leukaemia by Hughes, Bennett and Virchow, Cohnheim introduced the term "pseudoleukaemia," which has given rise to no little confusion. Pseudoleukaemia seems to be a pathological wastebasket into which all sorts of conditions asso-

*Read in Section on Medicine of the Southern Medical Association, Seventh Annual Meeting, Lexington, Ky., November 17-20, 1913.

ciated with enlarged glands, or enlarged spleen, without the blood changes of leukaemia, have been dumped, so that we find distinguished authors, like Senator, referring to splenic anaemia as the splenic form of pseudoleukaemia or Hodgkin's disease. The brilliant work on the histology of the latter disease, by Reed, Longcope and others, as well as the work of Fraenkel and Much, Negri and Mierimet, and Bunting, on the etiology proves beyond all doubt that splenic anaemia has nothing to do with Hodgkin's disease.

In 1882 Gaucher described a case characterized by splenomegaly, anaemia and a distinct anatomical picture as primitive epithelioma of the spleen. This is an extremely rare disease, of which to date only 15 cases have appeared in the literature under the name primary splenomagely of the Gaucher type. The recent work of Mandelbaum would seem to indicate that this is a distinct disease, in all probability related to the blood diseases. It begins at an early age of life, frequently affects more than one member of the family, and runs an extremely chronic course. The clinical features of the disease are pronounced hybertrophy of the spleen, subsequent enlargement of the liver, the absence of enlarged lymph nodes, the absence of jaundice and ascites, the absence of a distinct blood picture, the presence of discoloration of the skin, and a tendency to epistaxis and other forms of haemorrhage. The lesions of the disease are found in the spleen, lymph glands, bone marrow and liver. In these the presence of iron containing pigment is conspicuous. The most prominent feature, however, is the presence of large multinuclear cells with characteristic cytoplasm and peculiar large phagocytic cells which arise from large atypical lymphocytes in the germ centers. These large phagocytic cells enlarge after leaving the lymph follicies when the nature of their protoplasm is changed, becoming vacuolated and wrinkled. They are carried by the portal vein to the liver, where they are destroyed. Their disintegration gives rise to substances, possibly toxines, which excite increase of the interlobular connective tissue. The most recent work, therefore, tends to separate these cases from splenic anaemia.

Fibro-adenia of malphigian corpuscle and pulp. True Banti. (Dr. Burns' case.)



Fibro-adenia malphigian corpuscle and reticulum. Malarial pigmentation.

In 1883 Banti published the results of a study of three cases. The first case was a patient 72 years of age, who presented, without apparent cause, the clinical picture of splenomegaly and progressive anaemia, complicated by pneumonia, from which the patient died. Autopsy showed pneumonia, general sclerotic changes of the organs and enlargement of the liver, with slight increase of connective tissues. The spleen was enormously enlarged, of increased consistency, and the capsule was thickened. There was no enlargement of the lymph nodes and no evidence of lymphomatous infiltration of any organ examined.

The second case was in a boy 18 years of age. There was primary enlargement of the spleen, with progressive anaemia without apparent cause. There was no autopsy.

The third case occurred in a boy 16 years of age. The clinical features of the case were a very large spleen, which preceded the other symptoms, ascites, anaemia; the erythrocytes were 3,900,000, Hb. percentage 68, leucocytes 7,000. Splenectony was performed followed by death. The autopsy showed chronic peritonitis, and a granular liver which weighed 1,050 grams. The spleen showed the following changes: It was enlarged, the capsule and trabeculae were thickened, the follicles were nodular and larger than normal, and the wall of the central artery was sclerosed. The reticulum was thickened and the pulp contained fewer cells than normal. Banti used the term splenic anaemia to describe a condition occurring without recognizable cause, characterized clinically by primary splenomegaly, a secondary anaemia of the chlorotic type and anatomically by distinctive changes in the spleen.

In 1894 Banti studied ten cases, including the three referred to above. From these he separated a group which presented the clinical and anatomical features of the above three cases, but which were sooner or later associated with cirrhosis of the liver. It is to this group of cases that the name Banti's disease has been applied.

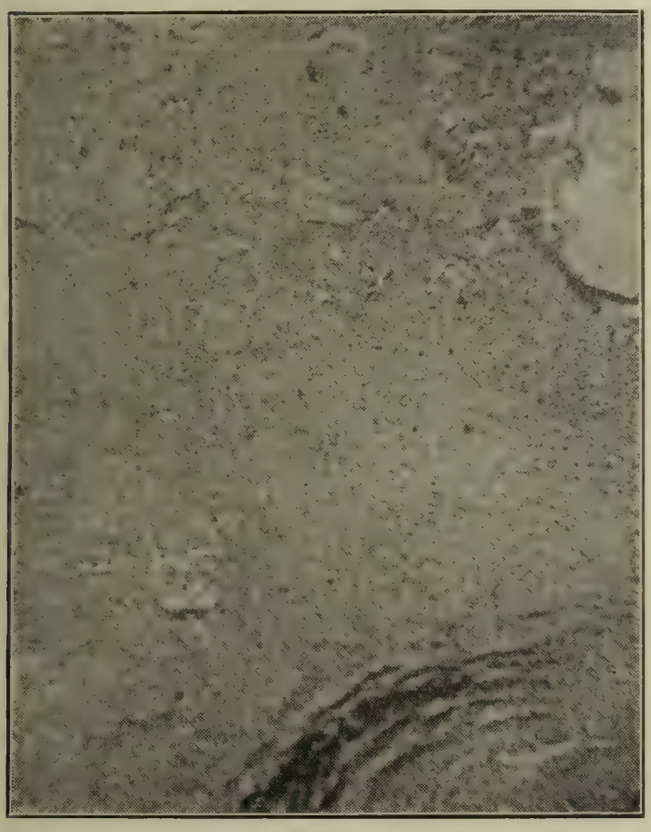
Osler popularized splenic anaemia as a clinical entity by a study of 18 cases of his own and 45 cases furnished by members of the Association of American Physicians. The result of this study was published in the *American Journal of the Medical Sciences* in 1900 and 1902. Osler's conclusion was that from among the conditions with which anaemia and enlarged spleen are associated a well defined disease may be separated, which conforms to the following definition: A chronic affection, probably an intoxication of unknown origin, characterized by progressive enlargement of the spleen which cannot be correlated with any known cause as malaria, leukaemia, syphilis, cirrhosis of the liver (primary splenomegaly), anaemia of a secondary chlorotic type (leucopenia), a marked tendency to hemorrhage, especially haematemesis, and many cases by a terminal stage of cirrhosis of the liver, associated with ascites, jaundice, etc. (Banti's disease).

Since that time many cases have been reported as Banti's disease which have nothing to do with this entity; for example, venous cirrhosis of the liver, biliary cirrhosis of the liver, pylethrombosis, acute infectious splenomegaly, etc.

In 1910 Banti published an article in *The Folia Hematologia,* describing the disease bearing his name. This article was based on 50 cases collected which occurred without known cause and which conformed to the clinical history of the disease and which were proven anatomically by biopsy or autopsy. Banti assumes the presence of a toxin which is probably of infectious origin, although he was unable to demonstrate the presence of bacteria or parasites by examination of the peripheral and splenic blood during life; the splenic juice, blood from the splenic vein, and bone marrow obtained at autopsy; of sections of the spleen, liver and bone marrow; cultures, aerobic and anaerobic in various culture media;

by injecting the blood, splenic juice and bone marrow into various animals.

This toxin first localizes in the spleen. It does not exert a phlogistic action as no exudate or granulomatous tissue is found. It produces a condition of the recticulum of the pulp and the malphigian corpuscles designated by Banti as fibro-adenie, as well as degenerative changes in the cells of the pulp and malphigian corpuscles. Since the changes are more constant and more severe around the pencil-formed arteries, he assumes that the



Fibro-adenia of reticulum. (Dr. Malone's case.)

poison is conveyed to the spleen by the arterial blood.

In the spleen toxines are elaborated which give rise to the general and local phenomena of the disease.

Amongst the general features are especially the anaemia and hyposthenia which accompany the disease, and amongst the local changes atrophic cirrhosis of the liver and sclerotizing endophlebetis of the splenic vein and portal veins. The toxin or toxines, therefore, produce anaemia, asthenia and cirrhosis.

For convenience of description Banti divides the clinical history of the disease into three periods.

The disease is extremely chronic in its course, and the first period extends over a period of from three to five years. This period is characterized by enlargement of the spleen, which on an average weighs about 1,000 grams. The surface is smooth and hard. It is not painful unless complicated by perisplenitis, and the notches are to be felt distinctly. When once the spleen has attained this size it retains it throughout the further course of

Fibro-adenia of reticulum. Connective tissue stain. (Dr. Burns' case.)

the disease. There may be irregular fever and a secondary anaemia of the chlorotic type present. The anaemia may form the principal clinical feature of the disease, or it may be slight and remain so, and in some cases may be absent. With the anaemia, or independent of it, the patient complains of a condition of asthenia. In this period there are usually no gastro-intestinal disturbances. The lymph glands are not enlarged, and Banti states that in this stage if the anaemia is severe there may be hemorrhages, but they do not form the pic-

ture of a hemorrhagic diathesis as is seen in some cases of leukaemia.

The duration of the second period is variable, and in addition to the above described symptoms is characterized by urinary changes which show a diminished quantity and increased concentration of the urine and the presence of urobilin. Dyspeptic symptoms, diarrhea and hemorrhoids may also be noted. Jaundice and ascites are not usually observed in this period.

The third period is characterized by the occurrence of a painless and feverless ascites, diminution in the size of the liver and urinary changes. In short, the symptoms of this period are those of atrophic cirrhosis plus the considerable enlargement of the spleen.

To illustrate the disease I present two cases for the histories of which I am indebted to Drs. Burns and Malone.

Dr. Burns' case was Mrs. D., who consulted the doctor in June, 1912.

Personal History—White. Age 37. Housewife.

Family History—Father died at 63 years of age from pneumonia. Mother died at 33 from childbirth. Eight brothers, seven of whom died in early childhood; one living and in good health. Seven sisters, six of whom died in early childhood; one living and in good health.

Previous History—Measles at 8 years of age. Chills and fever once in awhile. Inguinal adenitis four years ago.

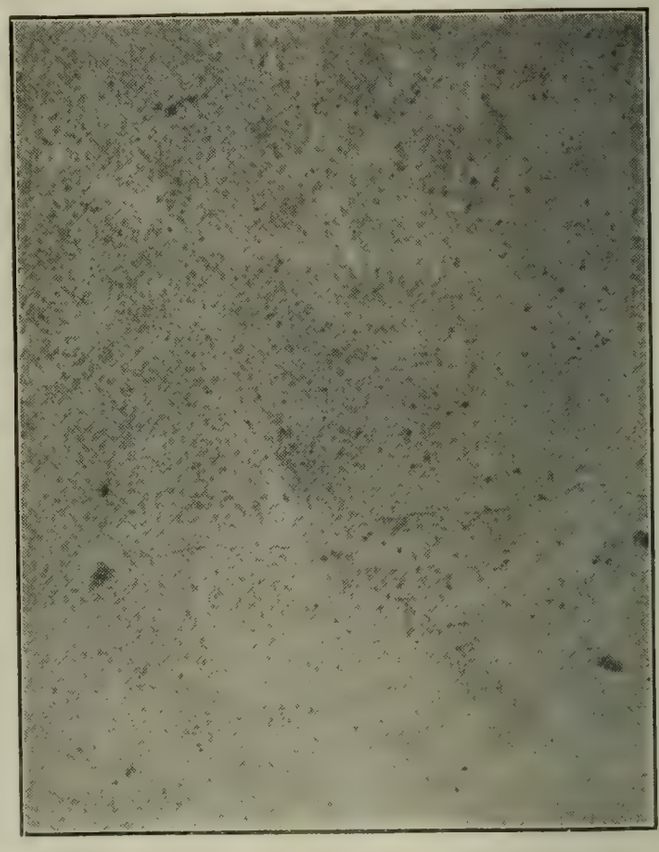
Menstrual History—Began to menstruate at 16 years and has been regular except when pregnant, until April of this year.

Pregnancies—Eight full term. Three of these are living and in good health; five are dead, having died between the ages of 6 months and 2 years. Three of these died of pernicious malaria, one of bronchitis and one of bold hives.

Present Illness—The patient complains of menorrhagia and pain in the right side.

Physical examination shows tenderness over the gall bladder, an enlarged spleen extending 2 inches below the umbilicus. The blood shows Hb 90.7 per cent and differential leucocyte count Poly's 81 per cent; SL's 8 per cent; LM 11 per cent. No malarial parasites. The patient returned to her home in Arkansas and returned to the hospital on August 20 for operation. Examination at this time showed the enlarged spleen, enlarged liver and ascites. The Hb per cent was 60 per cent; Dif. leucocyte polys 71 per cent; SL's 9; LM's 17; Evos 0. No malarial parasites. Splenectony was succesfully performed and at operation there was found ascites, a cirrhotic liver and no evidence of portal thrombosis.

The microscopical examination of the spleen showed thickening of the capsule and trabeculae, fibro-adenie of the recticulum of the pulp and of the malphigian corpuscles. There was proliferation of the endothelium of the reticulum and of the venous sinuses; absence of lymphocytes, globuliferous cells and iron containing pigment. Megacaryocytes were fairly numerous and no malarial pigmentation was present.



Fibro-adenia of malphigian corpuscle. Malarial pigmentation. (Dr. Burns' case.)

Dr. Malone's case was Miss O. T., age 35; white; residence, Mississippi. She complained of malaise dyspnoea, loss of weight and strength, swelling of the abdomen and tumor in the left side. Duration of symptoms five or six months, although she did not know how long the tumor in the left side had existed.

Family History—Father living, in good health. Mother living, in good health; one brother living, in good health; four sisters, living and healthy.

Previous Illness—She had chronic diarrhoea six years ago which was diagnosed tuberculosis of the bowels, although there was no manifestation of

tuberculosis elsewhere. She had never had malaria.

Physical examination revealed an enlarged spleen and ascites. The heart and lungs were negative. The blood showed 5600 leucocytes, of which 68 per cent were polys; 20 1-2 SL's; 11 1-2 LM's. The urine was negative. Splenectomy was successfully performed by Dr. Malone. At operation there was found ascites, enlarged spleen and an enlarged and granular liver. There was nowhere any evidence of tuberculosis nor was there thrombosis of the portal vein.

The spleen weighed three pounds. There were scattered areas of perisplenitis; the capsule was

Fibro-adenia of malphigian corpuscle. High power. (Dr. McGehee's case.)

thickened and the consistency increased. The cut surface was reddish, however, with whitish nodules and streaks.

The microscopical examination showed thickening of the capsule and trabeculae, fibro-adenia of the reticulum and of the malphigian corpuscle in various stages of development. There was marked diminution of the lymphoid tissue, degeneration of the pulp cells. There was absence of the products of haemolysis and malarial pigmentation.

Banti's disease as a nosological entity has not been accepted by all authors.

Ramorino and Foa, while believing it to be a distinct entity, do not believe that the liver changes are connected with the spleen changes. They think that the liver and spleen changes probably have a common cause which arises from the intestines. Gilbert and Lereboullet regard Banti's disease as a hyper-splenomegalic, biliary cirrhosis or acholuric haemolytic jaundice.

Gauckler thinks that Banti's disease is dependent upon excessive haemolysis with reactive sclerosis of the spleen. Zypkin, Albu, Naunyn and others regard Banti's disease, so-called, as the usual atrophic cirrhosis of the liver of the splenomegalic form.

F. Parks Weber regards it rather as a symptom complex which may be set up by various causes, some of which are known and others are as yet undiscovered.

Banti also discusses the relation of the disease bearing his name to splenic anaemia, syphilis and malaria.

With regards to malaria he states that in none of his cases were signs of malaria present; none of his patients dwell or had dwelt in malarial localities; examination of the blood, splenic juice and bone marrow failed to show the presence of malarial parasites. Quinine was without effect on the course of the disease. He further points out that the spleen changes in Banti's disease are different from those in chronic malaria. In the latter there is the presence of malarial pigmentation, the parenchyma of the organ is cavernous and the reticulum and malphigian corpuscles do not show the fibro-adenie of Banti's disease. He, therefore, concludes that malaria bears no relation to Banti's disease. .

It is a matter of common observation that malaria may produce the clinical syndrome of Banti's disease, as has been shown in the cases reported by Osler, Stengal, Parks Weber, Cohen and Rosenberger and others. Senator states that malaria may produce the same pathological picture in the spleen as Banti's disease. So far as I have been able to determine none of these cases have been studied with reference to the characteristic anatomic lesions described by Banti for his disease. From the

study of several cases, I am convinced that the presence of malaria in some of these cases should not exclude the possibility of a true Banti. That, indeed, many of the splenomegalies occurring in malarial localities are cases of true Banti with the accompanying presence of malaria. It is difficult to judge what influence, if any, the malaria exerts upon the Banti entity.

As supporting this view, I present the following cases:

Dr. McGehee's case:

M. O. Meyer; male; white; age 30; single; manager of a cooperage company. Consulted the doctor, J. L. McGehee, to whom I am indebted for this history, January 13, 1913, complaining of anorexia, shortness of breath, weakness, pain and tumor in the left side, vomiting of blood and passage of blood from the bowels.

Previous Illness—Pneumonia in 1907; chills and fever off and on for ten years, last attack three years ago; gonorrhea now. Denies alcoholism and syphilis.

Present illness began eighteen months ago with pain in the left side and slight fever and aching. While up and about his work he would have these attacks, lasting two or three days in each month. On January 2, 1913, at about 10 a. m., he passed a large quantity of blood from the bowel. He had some nausea throughout the day, and at 7 p. m. he vomited about one-half gallon of dark clotted blood; at 11 or 12 p. m. vomited more blood. Haematemesis recurred the next day at about 4 p. m. He remained in bed until he came to the hospital, which he entered January 13, 1913.

Upon physical examination there was found marked pallor of the skin and mucous membranes. The heart was negative; there was flatness over both sides of the chest at the base. Aspiration of the left chest showed practically pure blood. The abdomen was distended, containing a small quantity of free fluid. The spleen was markedly enlarged, extending to within a few inches of the anterior superior process of the ileum and to the umbilicus anteriorly. It was hard, slightly moveable and the notches could not be made out distinctly. The temperature was 99.4 and the pulse 100. The blood showed Hb 30 per cent; red blood cells 2,300,000; C. I. 64; leucocytes 4300. Stained smears showed rather marked anisocytosis, slight polychromatophilia and very slight poikilocytosis. The differential count of the leucocytes did not show any marked variation from the normal. There were no pigmented leucocytes. Prolonged search in thin and dehemoglobinized smears did not show any malarial parasites. The Wassermann Noguchi reaction was negative. Von Pirquette's negative. The patient remained in the hospital until February 7, 1913. During this time he had slight fever, his temperature never, however, going above 100. During this time in the hospital he had three slight attacks of epistaxis and one of melena. The abdomen rapidly filled with fluid after admission and he was tapped five times during his stay, with the removal of from two to three gallons each time. This showed physically, chemically and microscopically the characteristics of ordinary ascitic fluid. He was treated symptomatically and with sodium cacodylate hypodermatically. He left the hospital slightly improved.

On March 18, 1913, he returned to the hospital for operation. Temperature 98 2-5, pulse 85, ascites. On March 14 he was operated on by Dr. McGehee, who performed splenectomy and omentopexy. At operation the abdomen contained a considerable amount of ascitic fluid. The spleen was adherent to the abdominal wall, stomach and colon. The liver was distinctly cirrhotic and there was nowhere evidence of the presence of tuberculosis on inspection. The mesenteric lymph glands did not appear enlarged. There was no obstruction of the large vessels in the hilum. The spleen was submitted to Dr. McElroy for examination, whose report is as follows:

The spleen retains its normal shape. It weighs four pounds, is greyish dark in color and shows areas of perisplenitis. The capsule is thickened. The spleen cuts with resistance. The pulp is firm and presents a dark reddish color with white streaks throughout corresponding to the thickened trabeculae and white dots to the fibrosed malphigian corpuscles.

Microscopical examination shows the capsule to be thickened. The increase being due largely to thickened fibrous connective tissue which stains red with Van Giesen's stain. There are also a few nonstriated muscle fibers and some elastic fibers as shown by Weigert's stain.

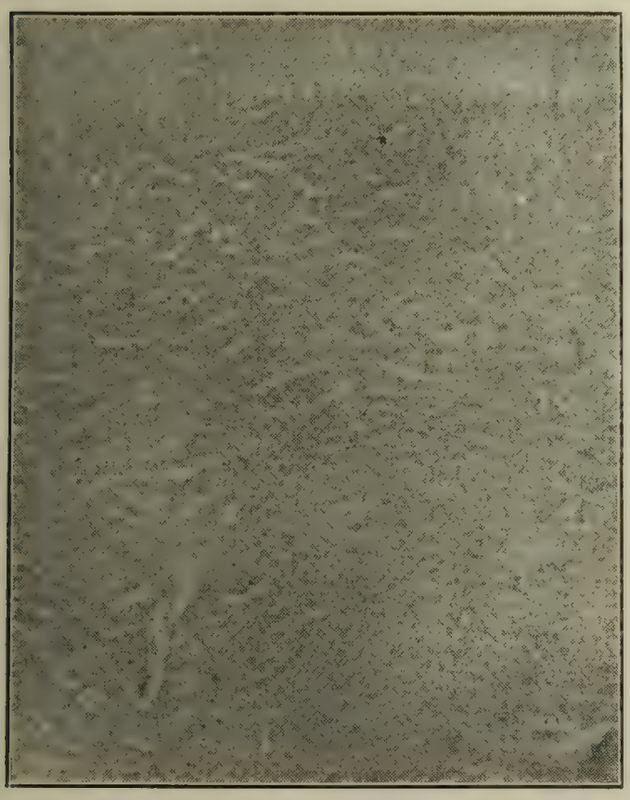
The trabeculae are thickened and closer together than normal. Special stains, Van Giesen's and Weigert's shows old connective tissue and elastic tissue. The blood vessels in these are markedly thickened. In them is also much free black pigment in coarse and fine grains which does not give the reaction for iron.

The reticulum is increased and moderately thickened, which is beautifully shown in sections stained by Ribbert's modification of Mallory's stain for connective tissue. Just beneath the capsule this shows a distinct adenomatous appearance.

The endothelium of the reticulum shows marked hyperplasia. The nuclei of these cells are vesicular and show rather numerous mitotic figures. Many of these cells are free in the pulp spaces in which are also seen splenic cells. Macrophages containing non-iron containing pigment but no red blood cells.

The walls of the larger arteries are thickened and surrounded by proliferating endothelium. The smaller arteries are thickened but no lymphocytes can be made out around these.

The venous sinuses are lined by swollen endothelium which shows some tendency, though not marked, to hyperplasia. These cells contain the



Fibro-adenia of reticulum and malphigian corpuscle. Malaria pigmentation. (Dr. McGehee's case.)

same character of pigment which is found in other areas. In the venous sinuses are seen a few proliferated endothelial cells, the white elements of the blood, easinophiles being relatively numerous and splenic cells. No parasites free or in macrophages can be made out by Leishmann's modification for staining malarial parasites in sections. Very seldom a megocaryocyte is observed.

There are no typical malphigian corpuscles anywhere to be seen. A few fibrous areas which have apparently developed from the follicular artery and by increase of the reticulum are to be made out. No, or at least the fewest number of, lymphocytes, are present in these areas.

The principal features of the sections seem to be fibrous hyperplasia of the capsule and trabeculae, increase and some thickening of the reticulum, which is apparently due in large part to hyperplasia of the recticular endothelium and to a less extent of the vascular endothelium, the presence and distribution of malarial pigment in such a way as to suggest an old malarial infection.

The patient made an uneventful operative recovery. There was at no time recurrence of the ascites and the anemia markedly improved, although the patient continued to have attacks of estivo-autumnal malaria. Under the influence of anti-malarial treatment these attacks were controlled and the patient, who presented himself for examination a few days ago, expressed himself as being in perfect health, which corresponded to the physical examination. His blood at this time showed 6,000,000 red cells, Hb 85 per cent, lucocytes 7500. No evidence of anaemia in the stained specimen.

The next case was that of a man seen in consultation with Dr. Smythe, to whom I am indebted for the history.

Name—P. D., Evadale, Ark.; age 18; male; occupation, student and farmer's son. Appearance, slight, pale, anaemic, ascites.

Family History—Father living, in good health, considering he is addicted to the excessive use of alcohol. Mother died of typhoid fever. His two sisters are living, in good health, though rather anaemic. Both are married and the mother of children. One brother, who is reported to have enlarged spleen and anaemia.

Previous Illness—Patient has been pale, anaemic and shortwinded all his life. He states that he had chills and fever at times during his early youth but never has any spell of malarial or continued fever, never had typhoid fever or pneumonia. The last chills he remembers having were five years before his admission into the hospital.

To the best of his recollection the large lump or tumor in left hypochondrium was first felt five years ago and has been steadily growing larger since that time. He has been treated by different doctors at different times for the past five years without influencing his general physical condition or changing the size of the tumor.

Patient complains of great weakness, loss of strength, a feeling of impending dissolution because of imaginary heart lesion. Pallor marked, pulse quick and small at times. Usually pulse regular, soft and of diminished force. Bowels habitually constipated. Appetite variable, digestion

bad—at times very bad and patient suffers a good deal from discomfort after eating.

Physical examination revealed spleen extending to right of median line and between navel and left anterior superior process of the ilium, thickened, rounded, fissures could not be detected. The liver was enlarged, extending considerably below the costal arch, and there was fluid present in the abdominal cavity.

The patient had experienced during the past few years repeated attacks of epistaxis, had vomited blood twice and passed blood from the bowels on several occasions—did not remember how many times. Blood passed from bowels always old and clotted, that from the stomach fresh and dark.

Examination of blood showed: Secondary anaemia of the chlorotic type with leucopenia and the absence of malarial parasites and pigment. (The report lost.)

Operation—Spleen removed. Weight, after drainage of blood from it, 4 3-4 pounds. Adhesions to omentum and intestines separated—not extensive but rather dense, and in an effort to separate them the capsule of the spleen was ruptured, permitting a slight quantity of the fluid to escape into the free peritoneal cavity.

Spleen globular in shape and fissures very shallow. Liver found greatly enlarged and unusually dark in color, density increased, and there was a feeling as of cirrhotic nodules. The gall bladder contained bile that was easily expressed through the common duct.

Patient made a prompt operative recovery after removal of the spleen, leaving the hospital in ten days, and in about two weeks reported at my office with a severe attack of diphtheria. Was referred to the Hospital for Contagious Diseases and made a prompt recovery following administration of antidiphtheritic serum. Had hard chill and considerable fever as result of the infection.

Later examinations of the patient's blood have showed marked improvement in same and he has gained steadily in health and strength and some months ago resumed his occupation as general helper about the store. He visited my office every week for three months and showed constant improvement in every way and reports from him are to the effect that he is now enjoying perfect health.

This report written August 28, 1913; operation performed November 25, 1912.

The spleen upon removal was carefully examined but not with same detail as the McGehee case. It showed fibrous hyperplasia of the capsule and trabeculae. Increase and thickening of the reticulum fibrosis of the malphigian corpuscles, very scant lymphoid tissue and malarial pigmentation.

The third case is one of Dr. Burns, who kindly furnished the clinical history.

Mrs. A. B. consulted the doctor May 22, 1912.

Personal History—Female; white; 50 years of age; married; housewife. Residence, Arkansas.

Family History—Father died of pneumonia at 59; mother died in confinement at 35; one brother died at 7 of infection of the scalp; one sister died at 7 from pneumonia; two sisters dead, cause unknown.

Previous Illness—Measles, chills and fever, la grippe.

Menstrual History—Irregular for the past ten years.

Pregnancies——Nine at full term, one premature. Deliveries all normal. Four died small. No T. B.

Present Illness—Begun in January, 1911, with severe grippe. She has had frequent attacks of chills and fever. She says that her spleen floats all over the abdomen.

Physical Examination—Shows a fairly well nourished woman. The liver dependent, reaching 2 1-2 inches below border of ribs. Lungs and heart negative. The spleen enlarged, reaching to illiac crest below and anteriorly to the median line. The urine is negative and the blood shows Hb 80 per cent; differential count, polys, 80 per cent; SL's, 4 per cent; LM's 16, one nucleated red and tertian malarial parasite.

Splenectomy was performed with complete recovery. Weight 5 1-2 pounds.

The examination of the spleen microscopically showed thickening of the capsule and trabeculae, fibro-adenie of the reticulum and malphigian corpuscles, malarial pigmentation and absence of the products of haemolysis.

Other cases studied clinically as well as pathologically convince me that many of the marked splenomegalies found in malarial localities are true Banti, and have associated with them the presence of malaria.

DISCUSSION.

Dr. Frank A. Jones, Memphis—Dr. McElroy has given us in his usual way food for thought, as he does in all of his papers.

For many years I have been somewhat confused in my own mind as to how to classify Banti's disease. You have doubtless observed that the concensus of opinion of the various writers of books we examine is to use it synonymously with the term splenic anaemia, and Banti, in describing the three stages, mentioned the terminal stage

in which there is ascites associated with enlargement of the liver. Others describe the condition as being synonymous with splenic anaemia, making but little comment bearing on the ascitic stage or cirrhotic processes going on in the liver. There is a difference of opinion among authorities bearing on the syndrome which we classify as Banti's disease. Dr. McElroy and I work in the same wards in the Baptist Hospital and City Hospital of Memphis, and we see a great many cases of splenic enlargement, and we are at a loss by clinical examination of the blood, urine and by all the evidence that can be brought to bear where to put these cases, and as to what pathologic or clinical diagnosis we should make. We see in Memphis a number of splenic conditions in our hospitals. My experience has taught me that of the cases that can be classified as Banti's disease, in nearly all instances that have come under my observation I have found one of three diseases has prevailed. The patient has been syphilitic, and I lay considerable stress on syphilis. In two cases we observed together we got a positive Wassermann reaction. Those living in the malarial districts of Arkansas and Mississippi should know the blood findings bearing on malaria.

Another type of cases is found in those people who have healed tuberculosis of the lung. I am very much of the opinion that before long we will make more research bearing on ascites; that the day will come when ascites in its relation to Banti's disease in a great measure will bear the same relation to tuberculous peritonitis that it does to atrophic cirrhosis of the liver. I have seen a great many cases in which we found pathologic findings where there was an element of tuberculous peritonitis in the ascitic stage, in which there were previously all the syndromes of a true Banti. I think in the future we will make more research bearing upon tuberculosis and ascites in Banti's disease.

Dr. W. B. Burns, Memphis—Some years ago I presented to the Mississippi Valley Medical Association one of the earliest cases of splenic anaemia along with a malarial spleen and with a case of splenic myelogenous leukemia. Since then I have seen a number of cases of splenomegaly in our region in which I was led to believe that they were not malaria per se, and in looking those cases up and watching them from time to time I determined many of them were probably splenic anaemia, so-called Banti's disease, or Banti's disease plus malaria.

It is unnecessary for me to go into the pathology of these cases, as Dr. McElroy has done so. You will notice in two cases he reports, one was almost a pure Banti, splenic anaemia, and the other with malaria engrafted. I believe that investigation in these cases should be more circumspect, especially in the malarial belts, where, I am sure, many of them are overlooked and treated ad nauseam, without results, with quinine. I have a man now in the hospital whom I am satisfied has splenic anaemia, with an absence of the kidney—pyonephrosis, and with a large perinephritic abscess. He has had an enlarged spleen ever since he was 15 years of age. He does not remember the time when he did not have an enlarged spleen. It occurred to me several times before to investigate this particular man. I operated on his wife two years ago for gall-stones, and had occasion to observe him at that time and to investigate him later. I think we shall find that he has splenic anaemia of the chronic type.

Dr. J. E. Paullin, Atlanta, Ga.—I happen to have had recently a rather unusual observation in this particular disease. I saw a man who a year ago last August had had Banti's disease and had his spleen removed 14 years previously by Dr. Warren of Boston. We was a civil engineer and was operated on undoubtedly for an entirely different condition. He had an incision 16 c. m. long about the border of the rectus. He told me his spleen had been removed. I was curious to find out the condition found at the time of operation. I wrote Dr. Warren to find out whether he had a record of the case. He sent me a complete record of it. The blood findings were very curious; I do not remember just offhand what they were. He was slightly anaemic. That could be traced to a different condition. He was building a dam across a river and while there contracted malaria. That was the condition for which he consulted me. He had practically a normal red count, as I remember it. His hemoglobin was slightly diminished, and the thing that impressed me very much about the blood condition was the fact that he had an exceedingly large mononuclear differential count. I do not remember exactly, but I think it was 25,000 or 35,000. The man was actively at work for fourteen years pursuing his profession of a civil engineer, and so far as he knew never experienced any discomfort from the operation. He died six months later, but I never found out the cause of his death or the symptoms which he presented at that time. I think that is a considerable period of time after operation and the blood findings in this case were of a great deal of interest.

Dr. William Krauss, Memphis—There is very little I can add to the sum of knowledge in connection with this subject. It might be well to call attention to the fact that we are not making an effort to differentiate the various splenomegalies with anemia. Ordinarily the common malarial cachexia, with enlarged spleen, is readily differentiated from this condition. We have a flat fan-shaped spleen, with a history of previous malaria. If we have a history of probable spleno-myelogenous leukemia in which the blood count has not been given, as frequently happens in some neighborhoods where they do not use the microscope, there possibly may be in some cases some confusion, but even when we have cases that give a clinical picture that is reasonably clear, there is still an element of doubt because we have no specific method of diagnosis. We have the chamois-colored skin and thick spleen, and we may have the enlarged liver, a more or less significant blood count, and still we are not clear as to what we are dealing with.

In regard to the case of Dr. McElroy, where he had malarial pigmentation, the question is open whether or not that is a possible complication; whether or not we are not dealing with Banti's disease plus the malarial pigmentation of the spleen; and another thing: This patient not having been autopsied, we only know the clinical side of the condition in the liver, so that if Banti is correct in assuming he was a pathologic entity, it is

not likely that malaria or any other distinct etiologic factor will bear any relationship to condition. The important point about it clinically is that the only remedy for the condition is early splenectomy. No case has been found to recover unless that was done, and there is where the differentiation is of enormous importance because there are other conditions in which removal of the spleen cannot be advised.

Dr. V. H. Bassett, Savannah, Ga.—This paper has interested me very much and I regret the doctor was not able to present it in full.

In line with the remarks of the last speaker, I wish to say that it is difficult to differentiate these conditions with enlarged spleen. Two years ago I saw a woman with an immense spleen filling the whole side of the abdominal cavity, and with the clinical symptoms of indigestion, anemia and hemorrhages from the stomach. Her lood picture at the time showed about 10,000 leucocytes. She had anemia of moderate grade. I do not remember the red cell count, but it was reduced materially. The color index was a little high. She had a leucocyte count of only 10,000, and a differential count which showed nothing of a particular nature except there were some myelocytes. When first observed there were 3 per cent of myelocytes, but no eosinophilic myelocytes which are necessary for a diagnosis myelocytic leukemia. I kept her under observation for some time, and the only thing that should have enabled me to make an absolute diagnosis was a doubtful myelocytosis, but there were also multiple subcutaneous fatty tumors. That condition of lipomatosis is occasionally associated with myelocytic leukemia, but, as a rule, with a leukemia of decided character, with great increase in the myelocytic cells. She was seen by a number of practitioners, all of whom were in doubt. Finally, on account of the long duration of the condition, in which there was no increase of leucocytes, I was inclined to think she had splenic anemia. I sent her to Dr. Barker, and during the ten days she was at the Johns Hopkins Hospital her blood count went up to 40,000 or 50,000 and the diagnosis of leukemia was established. That woman was observed for a long time, with frequent blood counts and for long periods the leucocytes did not increase to any great extent, not going over 10,000 and frequently under normal.

Enlargement of the spleen in our district is commonly due to malaria, next to myelocytic leukemia. With pernicious anaemia we may get decided enlargement. I have one spleen of large size in which the condition was pernicious anaemia. I would call attention further to the fact that enlarged liver with fibrous spleen does not always mean cirrhosis. You can get enlargement, but examination of sections shows there is simply a diffuse parenchymatous hyperplasia, and not a cirrhosis, so that enlargement of the spleen and even some indications of obstruction of the vessels do not necessarily mean cirrhosis.

I would like to ask the doctor as to the character of the pigment he observed in this case. Was it distinctly different from the iron pigment usually observed?

The pigmentation of spleens in cases of splenic anemia is one of interest. This pigmentation at times takes on special localization. I was fortunate enough to have one of these cases, so I have been much interested in the pigmentation, and I would like to know what the character of the pigment was, whether there was also with it the ordinary blood pigment.

Dr. J. B. McElroy, Memphis (closing the discussion)—As has been brought out, our notion of Banti's disease is very vague, the ordinary literature on the subject is very confusing, and it is necessary, in order to have a rational concept of Banti's disease, to realize just what Banti meant when he described this pathologic condition. The clinical diagnosis of Banti's disease is very hazardous, especially if you are likely to follow up the case by an autopsy. It is necessary, as I have pointed out, to exclude all of the various conditions with which the clinical syndrome is identical with that which is described by Banti as characteristic of the disease. As Dr. Jones has said, very frequently many of the cases which present identically the syndrome of Banti's disease, the primary splenomegaly, the characteristic anemia, and the terminal stages of cirrhosis of the liver, may all occur in conditions which have known etiologic factors, as in tuberculosis, malaria, leukemia, thrombosis of the portal vein, and especially in syphilis. I would like to call attention especially to two cases which I have now under observation in the Memphis City Hospital and have given me no little trouble in arriving at a diagnosis. There are some features connected with the cases suggestive of a tuberculous condition, yet there was no history really of tuberculosis, but there was an associated double hydrothorax or effusion, considerable increase of lymphocytes in the ascitic and pleural fluids, but careful tuberculin tests were negative, and finally, after excluding everything else, although the patient denied the possibility of syphilis, we had a Wassermann reaction made which proved positive, so that here, in all probability, we can surmise at least that this is a case of syphilis with a Banti syndrome.

The other case showed the same condition, and where we frequently have in these conditions known etiologic facts with which are associated the clinical syndrome, frequently we are unable to say whether or not they are true Banti's disease until after operation, and we have examined the spleen histologically.

With reference to the case which I have reported, unfortunately no sections were taken from the liver at the time of the operation which could easily have been done, and which has been done frequently by Banti and other observers, but the macroscopic appearance was suggestive of cirrhosis, in that it was distinctly granular, enlarged and hard, presenting the ordinary appearances of atrophic cirrhosis in the early stage.

With reference to the anemia which is associated with Banti's disease, there are several varieties. The anemia may be severe and form the leading clinical manifestation of the disease. Again, it may be slight and appear low and the disease continue for a long period of time. The first stage, as described by Banti, may exist for from three to five years or may be longer. Anemia may not be present to a marked extent, but attention has been called to it, and I have found in all cases I have records of oligocythemia and marked oligochromemia. The color index is al-

ways low. The percentage of hemoglobin is low in proportion to a number of red blood cells, and even Banti himself states—and I am in full accord with him—that leucocytosis never occurs in splenic anemia. In fact, there is almost always leucopenia, a fact which has been called attention to by Senator, but we do not believe this is entirely correct, because some cases may be associated with a normal number of leucocytes.

With respect to the case of Dr. Bassett, I think undoubtedly that very often in the course of leukemia, by virtue of an intercurrent infection, the absolute number of leucocytes is markedly diminished, sometimes possibly as a result of X-ray treatment, but almost always the diagnosis can be arrived at in these cases by a differential leucocyte count, and so far as my experience goes, except in one case which has been recently treated by Benzol, you can almost always make the diagnosis of leukemia from the differential leucocyte count. A high percentage of myelocytes and mast cells is characteristic of mild leukemia. I do not think eosinophilic myelocytes are necessary.

This case which I reported had all the macroscopic evidences of cirrhosis of the liver and histologically and clinically the symptoms of a true Banti's disease and gave all the reaction for melanin The pigment was non-iron containing. I want to emphasize the fact that these Banti cases are associated with a definite clinical syndrome, with a definite pathologic picture, and without demonstrable cause, and that this triad is necessary to make our cases to conform to true Banti, and when we can demonstrate the real cause we must separate the cases from the general group of true Banti.

TREATING THE GASTRO-INTESTINAL TRACT IN PELLAGRA.

By Clarence C. Elebash, M.D.,
Selma, Ala.

With the etiology and consequently the treatment of pellagra still unsettled, various and sundry theories are being put forward as to the cause and consequently as many treatments. Any cures, or apparent cures, however, cannot fail to be interesting. About two and a half years ago I saw an article in which the writer, as I remember, suggested that the question of an unbalanced ration—probably excess of carbohydrate—was an all-important one in pellagra. In his treatment the main issue was an abundance of fruits and green vegetables. That thought carried forward has been the real stimulus for these few remarks. No attempt will be made to review all the voluminous literature.

Pellagra is not as plentiful in this section of the country in the last two or three years. A great many of the cases that we see in this community do not live here, but come into town to see a doctor and get a prescription, and consequently are hard to keep up with. No treatment can be given a real fair trial in such cases. The cases upon which I base these few remarks are ones that I know have faithfully obeyed instructions. Not every one has been unquestionable pellagra; several have been border line cases, upon which I shall speak later. The condition in all, however, that gave the most trouble was gastro-intestinal, and in the intestinal tract will be found, I believe, the real cause of pellagra, absorption of some poison from this tract. What that poison is, of course, remains to be seen.

Inefficiency in intestinal digestion, whether by reason of biliary or pancreatic deficiency, will eventually make for *protein* toxin absorption. "When proteins are taken into the alimentary canal and are acted upon by digestive juices, the product becomes poisonous at about the peptone stage, and if the peptone formed in alimentary digestion should be absorbed in the circulation it would be highly injurious; but the digestive process proceeds and the peptone is broken up into harmless amnio-acids which are absorbed and synthesized into the protein of our bodies. When proteins find their way into the blood without being brought under the action of the digestive juices of the alimentary canal, they must be digested in the blood and tissues, and in this process the protein poison is set free; and since general distribution cannot be hindered it exercises its deleterious effects on the body. We now know that the symptoms of many diseases are due to the parenteral digestion of the proteins." (Vaughan, *American Medical Journal*, November 15, 1913). It is obvious, then, that cholecystitis or chronic pancreatitis would bring about one form of intestinal toxemia and might very well, in my opinion, give

the symptoms of pellagra. Jelks, of Memphis, writing in the SOUTHERN MEDICAL JOURNAL for March, 1912, believes that pellagra describes a series of symptoms dependent on intestinal parasitisis. He has noticed that the relief of skin lesions follows treatment and relief of the intestinal condition. Law, of Montgomery, has recently reported five cases of pellagra treated with lactic acid bacillus with good results; his idea evidently being to check intestinal putrefaction and consequent toxemia. Writers, I believe, have stated that pellagra is closely akin to scurvy. Results obtained with the treatment of which I speak would accord with such a view, possibly a "result of poison by ptomaines, possibly specific posion. All the theories, however, acknowledge that deficiency of green vegetables is one of the predisposing causes which lead to scurvy." (Tyson-Fussell, page 660).

I know that I do see cases that differ from true pellagra only in degree. Take this as a sample history: The patient complains of tiring more quickly on exertion, not able to do heavy work he was formerly used to without feeling extremely tired, no chills, very slight fever, no particular pain; the type of case that is so frequently spoken of as "full of malaria." The patient gives a history of "fullness and gas on the stomach," especially after eating. The stools indicate a poor digestion of fats and muscle fibre. Such a condition has been going on for several months. He has noticed an area on the dorsal surface of each hand, with a peculiar pigmented, dry appearance, tendency to scale; no itching, no burning. The patient is positive that he has never had such a condition before. I have also had such a patient volunteer the information that there was an excessive secretion of saliva. What is the diagnosis? Another similar case, having a marked chronic cholecystitis, presented, besides her intestinal condition, this interestng feature: On her hands and forearms, around her neck and over each cheek, the skin was rather rough and had a reddish-brown tinge (so slight the patient concealed it by the use of powder), and which I do not think was sunburn. This patient complained of constant burning in these areas. Several times during the previous year her tongue had been very red and sore for a couple of weeks at a time. Again, what is the diagnosis? Besides the treatment indicated, then, that is, hygienic, corection of diet, feeding some bile salts, etc., add a free diet of green vegetables and fresh fruit juices, and improvement is noticeable and rapid. Such was the case in these two patients.

To summarize, then: The idea is to look upon pellagra as one form of an intestinal toxemia, in itself causing the symptom complex, or possibly making fertile ground for a specific bacillus, which in turn is the direct cause. Treat accordingly, the all-important condition being an abundance of green vegetables and fruit juices.

A good plan, and the one I now follow, is giving eight ounces of fresh fruit juices every four hours. This juice being prepared by macerating oranges, lemons, pineapples, peaches, etc. The fruits themselves may be taken, which makes a very acceptable dish, the only trouble being that the pulp from oranges and pineapples, for instance, may excite a diarrhoea and aggravate pre-existing colitis. No other trouble will arise, though some patients will complain that they cannot take "so much acid," and will have trouble when eating one or two oranges a day, but be perfectly comfortable on above routine. Meat, milk, eggs, plus okra, lettuce, spinach, tomatoes, turnip greens and such comprise the rest of the diet. Rice, grits and raw breadstuffs are prohibited in order to avoid much starch. In this manner a full caloric value can be given. It is a good plan frequently to give dilute nitric acid in twenty-drop doses before each meal; or, to correct hypo-acidity, dilute hydrochloric acid, plus pepsin. The fruit juice is given as regularly and as faithfully as quinine in malaria, regardless of the stomatitis. Wood, writing in *Forcheimer Therapeusis,* advises prohibiting fruit juice while the mouth and tongue are sore. That is the very time when they are needed, and a mouth wash of

Dobell's solution will usually take care of the painful stomatitis. Below is given a characteristic history:

Negro man, 30 years old, came to my office in December, 1911, complaining of diarrhoea, griping, nausea and profuse expectoration. These symptoms had developed about three weeks previous. I immediately thought of pellagra, and advised a dose of castor oil, restricted diet, and told him to go home to bed, and to call me if he did not feel better on the next day. About two weeks later he came to the office hardly able to walk, with digestive condition worse, terrible diarrhoea, tongue raw and red, markedly increased secretion of saliva; on each hand, extending to just above the wrist, with a sharp line of demarkation, was a rough, pigmented erythema, characteristic of pellegra, and a similar condition showing on both feet. The patient told me that his wife also had just about the same trouble that he had, and was too weak to get out of bed. On visiting the house I found her worse than her husband, complaining terribly of the burning of her feet. Examination of the stool in each case showed indigestion of all classes of food, especially pancreatic indigestion; no hookworm, no amebae; there was an abundance of fat droplets and muscle fibre, with striation showing very plainly. These people were put to bed in the same house where they had been living for months past; a negro woman was procured to nurse them; they were given green vegetables of every kind as outlined above, plus fruit juices. The only medication that was given the man was dilute nitric acid in twenty-drop doses, three times a day, before meals. The woman had the same diet and medication, plus codeine and veronal to give her some sleep. Importance of the diet was insisted upon, and they took it faithfully and regularly. Within five weeks' time both were up, the man back at work, and his wife doing the housework. Since that time I have had them under constant observation, and at present they are both weighing more and in better health, according to their own statement, than ever before. They have had no return whatsoever of their trouble.

502 *Alabama Avenue.*

PELLAGRA.

By R. E. Sylvester, M.D.,
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In this short paper it is not the writer's purpose to enter into any discussion as to the etiology of pellagra. His desire is to emphasize the importance of change of climate and of diet and absolute rest of both body and mind in the successful treatment of this disease.

Be the cause what it may be, a cure is what is most desired, and, he believes, a cure as specific as any cure has been found. The writer's home, in the extreme southern portion of Mississippi, where this disease has been all too prevalent since 1906, has afforded him ample opportunity to observe it in all its forms and phases. Doctors of his home town have kept abreast of the times so far as remedial and dietetic measures are concerned, but their efforts have not been crowned with that measure of success observed in a high, cold climate where the summers are short and cool. Their efforts might have been more successful had they kept up active treatment during the winter months, instead of contenting themselves with tiding their patients over the warmer months to see them die during the second or third summer. It is not, so far as the writer is aware, generally known that a change in climate is the all important element in the successful treatment of pellagra. Bass, of New Orleans, was the first to recognize this, and the first patient sent to Colorado Springs was sent by him, a few years ago, and completely recovered. Since that time Dr. M. O. Shivers, of the above named city, has had under his care a great many severe cases, coming from several of the Southern and Western states. As might be anticipated, these cases came to him in the last stages of the disease and after apparently everything possible had been done for them that could be done in a hot climate.

It was the writer's daily routine to observe nine fully developed cases during his own convalescence from the same disease in Colorado Springs since the first of last July, and the complete recovery of these nine cases is the chief incentive that causes him to write this short paper. He has seen but one death of a pellagrin and this death should have been

ascribed to chronic alcoholism. This experience speaks volumes to one who has passed through the horrors of this deplorable disease, and it is his desire in detailing the treatment that restored him to health to help some other poor sufferer through some doctor who might not appreciate the climatic treatment of pellagra. First, *absolute rest in a cool, dark room,* away from disturbances of every kind, is the chief great essential. Then a firm, kind nurse, who by nature and training is a psychologist, is very essential to the successful management of the case. Next comes the question of diet. This should be absolutely free from starches, and as far as possible, from sugars until the bowels are under fairly good control and the odor, which to one trained in treating pellagra is pathognomonic, is no longer present. That I may be well understood I shall enumerate what I consider the best regimen for the first ten days' treatment of a bad case. From one to two pints of apple juice, given in divided portions during each twenty-four hours; two ounces of pineapple juice every four hours; also give orange and lemon juice as freely as is tolerated by the stomach. The whites of four to six eggs per day should be given with the lemon juice, and three glasses of fresh buttermilk daily for the first two or three days. After this three glasses of pasteurized sweet milk should be added to the above. So soon as the appetite begins to return all the whole raw egg, or poached eggs on Zwieback bread are allowed. Coffee and tea are admissible if the patient is a habitual user of these beverages. Castor oil in one-half ounce doses is given about the third day of active treatment, and repeated thereafter as often as necessary. Daily colonic irrigation of one-half gallon normal saline solution is a routine usage in practically all cases and seems to be a curative factor. Vaginal douches are administered to female patients. Now we come to the real medicinal treatment; and here let me warn those who are not experienced in the use of cacodylate of soda to go slow at first until they gauge the susceptibility of each patient, for I have seen poisoning from three-fourth grain doses alternated with three grain doses every other day. Too large doses of this salt at the outset seem to overwhelm the patient with a suddenly released pellagrous toxemia. The usual mode of administration as I have observed is this, viz.: Begin with three-fourth grain doses daily for four days. After this give three grain doses every other day. That is, alternate between the three-fourth grain doses and the three grain doses. Do this for the first six weeks of your treatment unless signs of arsenical poisoning supervene. After this give three grain doses every other day for six weeks longer, and after this seven grain doses every seven days, until you give twelve doses, or until a cure is complete. The above is a concise statement of the treatment I have taken myself and seen given to thirty-five bad cases since July 1 of 1913. So soon as the patient complains of hunger he should have chicken and broths and rare beefsteak. The very first starch allowed should be a well boiled Irish potato. There is no vegetable that will not do the patient good. In our effort to cure this disease we must use all the animal and vegetable juices, feeling at all times assured that no harm can come by their almost indiscriminate use. The constant pain in the abdomen is no indication to withhold active liquid feeding. The more liquid we get down, the less toxic will our patients be. There is one other drug I will mention that seems to act well as an hypnotic. I refer to veronal. Given in two and one-half to five grain doses in hot milk or tea at bedtime it comes nearer giving this class of patients rest than the more active hypnotics and has no bad after effects. It is surprising to one who has passed through the terrors of this disease how little relief is gained by the administration of opiates and other sedatives of that class. It does seem that sunlight is more harmful than any other one element to be avoided, but I consider opium and alcohol close seconds.

RATIONAL PSYCHOTHERAPY.*

By Robert S. Carroll, M.D.,
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Introduction.—The intimate relation of body and mind has been a problem for students of all centuries. In various phases it has entered into the superstitions, mythologies, medical treatment, literature, religion, and practical life of all recorded time.

It has remained for workers of the present decade to satisfactorily outline the scope and limitations of the power of the mind in dominating or influencing the body, and to dignify these relations as a special branch of science. A new and definite department of therapeutics has been developed, and languid indeed is the physician who is not rousing to an interest in psychotherapy.

The better medical schools are organizing special courses of psychology and founding chairs of psychotherapy in recognition of the admitted value of mental healing. It is well that our profession is turning an enlightened attention toward this subject, which has so long been the stronghold of medical ignorance and the citadel of quackery, and all too long have the untutored and credulous been victimized through equally ignorant or unscrupulous treatment. While much progress has been made in developing a pure psychotherapy, many problems remain unsolved, though physicians as a class have been slow in keeping abreast of the recent rapid advances in both its theory and application.

Limits of Psychotherapy.—The rank absurdities which have been propagated under the name of mental healing have most naturally rendered unthinking physicians intolerant of the whole subject, and this very attitude of thoughtless impatience has caused countless sufferers to turn to, and not infrequently be benefited by, the half truths upon which false psychotherapy is based.

Treatment by psychotherapy of fractured bones, errors of refraction, obstetric accidents, dental caries, physical deformities, hemorrhages, intestinal volvulus, scabies, cardiac dilation, asphyxia neonatorum, or any one of the long list of the mechanical interferences with physical life or comfort is but knavery, gross ignorance, or brainless, heartless fanaticism. Psychotherapy is useless, helpless, hopeless in the face of mechanical disorders.

The line cannot be so clearly drawn when we consider that longer list of human ills resulting from chemical damage. To treat burns, strychnine poisoning, acute uremia, smallpox, diphtheria, scarlatina, tuberculosis, hydrophobia, articular rheumatism or septic peritonitis by mental therapy will ever be quackery and all too frequently murder. But even as mental states are constantly modifying heart action and vaso-motor activities, so is the glandular system of the entire body subject to psychic influence. The dry mouth of acute dread, the moist eyes of sympathy, the dripping brow of mental agony attest this and physiology has long since demonstrated the power of the mind over gastric, hepatic, intestinal and renal activities, while much evidence is available, indicating a close inter-relation between the mind and that vitally important group, the ductless glands. Hyperthyroidism unquestionably increases nervous irritability, but the influence of mental ease and tranquility, growing out of an earnest faith, has often resulted in a marked subsidence of the symptoms of excessive thyroid activity. We must realize that the still semi-mysterious chemical reactions, the product of the tireless human laboratory, are constantly influenced by and are in part under the control of the emotions.

As we approach that growing list of human ills termed psychic, it is but reasonable to feel that errors in mental hygiene should be productive in causing its disorders, yet even in this disease group it is necessary to look carefully into the influences of the body on the

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mind before relegating all mental disorders to mental errors. States of delirium are most frequently of toxic basis; the depressions of the climacteric grow out of perverted internal secretions or general nutritive alterations, while many of the insanities are likewise produced. Pictures of hysteria, so perfect as to deceive the very elect, frequently mask the early stages of cerebral tumors. A large percentage of neurathenics are anemic, half-starved sufferers from chronic intestinal self-poisoning, secondary to colon bacilli infection of the duodenum and its tributaries, the well-known green bile intoxications. So we must be ever alert and neglect no physical or laboratory scrutiny which may reveal a damaging organic basis for the patient's disturbance. Nor dare we ever presume upon psychotherapy, even in the most susceptible, to neutralize physical damage and chemical injury with their protean and multitudinous symptoms. If our mental therapy is to be rational, it must concern itself with other causes and irritants than these.

Nor have we far to look to find the long, black list of psychic toxins which have infected man's mind since Cain's jealousy made murder possible. Every form of hatred, antipathy, hostility, malice, contemptuousness, animosity, abhorrence; anger, with its ill-visaged crew, revenge, resentment, rage, irritability, frenzy; cowardice, with irresolution, the yellow streak, the sense of insecurity, panic, apprehension, timidity and suspicion, with mistrust, skepticism, vagueness of thought, fickleness, hesitancy, inconstancy, pessimism; despondency, gloom, hopelessness and the miserable children of worry, the blues, bad spirits, perplexity, annoyance, depression; melancholy, with all the variations of remorse, anguish, regret, dishonor, self-reproach, self-condemnation, dissatisfaction, disappointment, heartache, a gnawing conscience—these and more illustrate those emotions which, singly, or in pairs, or in some lives in dire combination, acting through the sympathetic nervous system, more or less definitely, but none the less certainly, damage man's health.

Four hundred years B. C. the philosopher Plato said: "The trouble with the physicians in these times is that they pay too much attention to men's bodies and too little to their minds." And it is even so with a good many physicians today, who class this long, unhappy list of man's ills as by-products of physical states, and do not realize the fact that as often the physical states are secondary to these disorders of emotions and attitude. These are the foes, the truly worthy foes, against which psychotherapy may be honorably and legitimately directed.

Until very recent years, the limitations of our knowledge gave rise to a changing succession of false psychotherapies. Mankind was groping in the darkness of ignorance for the causes and nature of even the simplest diseases. Unending indeed has been the struggle of the human mind through all history to find the true mental healing. The demonology of the benighted ancients, the astrology of the Arabians and Egyptians, the Temple Sleep of the Greeks, a self-hypnotism in which the priests dreamed the proper medicines for the sufferer; Pagan superstitions and Oriental sophistries, idol worship, the incantations of the medicine man, the untold sacrifices of human and animal life, the belief in amulets and charms and holy relics, the visiting of shrines, the laying on of hands, and nominal praying in the form of repetition of holy words and phrases, indicate some of these efforts. During more recent years mesmerism and telepathy, clairvoyance and spiritualism, magnetic healing, hypnotism, suggestion, persuasion, patent medicines, placebos, quack doctors, Christian Science, electricity, hydrotherapy, homeopathy and mechano-therapy all exist because they approximate more or less the truths of psychotherapy. Nor should this interesting list be closed without calling attention to the present-day plight of the average practitioner. Even as the Old Man of the Sea entwined his legs about the neck of Sinbad the Sailor, un-

til that poor mariner was in despair of ever loosening his vital grip, so has the fetish of medical therapeutics fastened itself upon the wisdom of our profession until we seem helpless in its grasp, and we blindly dole out elixirs and tonics and stimulants and sedatives for heavy hearts and sick souls, with wisdom equaling that of the Fiji doctor's efforts to scare away the evil spirit of fever by the beating of tom-toms. No intelligent, sane person questions the efficiency of medicine, but no wise physician today depends upon it where psycho-therapy is needed any more than he employs a bread and milk poultice to reduce a dislocation.

Abuse of Psychotherapy.—While many of our profession have been slow to turn away from their abject servitude to drugs, it has not been so with numbers of the shrewd and unscrupulous, and there has been such a perfect deluge of psychotherapeutic pretenders as to well-nigh frighten the conservative practitioner from any association with the obnoxious subject. Some of these abuses require more than a passing word.

Nearly a century ago, the misuse of medication reached such a degree that homeopathy was born—a wholesome, helpful, constructive protest against the damaging medication of the day, and for many years homeopathy, with its emphasis on diet and nursing, grew in usefulness in spite of its absurdities of *similia similibus curantur* and the thirtieth attenuation; for its teachers and followers were inspired by the first fundamental element in all psychotherapy —faith. And this mental quality proved sufficient to relieve the ills of many thousands of nervous sufferers.

A generation since, Charcot developed in his picturesque and dramatic clinic hypnotic treatment and for a decade or more the nervous of all classes received benefits from this combination of faith and the injection of another's will. Hypnosis is a strikingly distinct form of psychotherapy, but it is only a half truth. Hypnosis reaches only the symptoms of the disorder and not its cause and is as void of science as the use of acetanalid to reduce temperature in typhoid fever.

A step in advance of hypnosis was the substitution of persuasion for suggestion. Like suggestion, it devotes its efforts to the removal of symptoms, but better than suggestion, it utilizes faith and demands an active application of the sufferer's will.

And then a great cult was born—Christian Science—and Christian Science has been an untold blessing to many, many thousands, even as it has been a most deserved rebuke to the non-development, one-sidedness and prejudices of medical practice. Through its teaching, with the powerful appeal to the religious nature, its followers have multiplied from among that rapidly growing class of modern neurotics, lacking exact knowledge, ruled by their emotions and not the children of reason; recruited from those sufficiently ignorant to accept the slogan, "all spirit and no matter," sufficiently credulous to deny the flesh and its ever-present sensations, sufficiently un-Christian to repudiate the crucifixon and agonies of the cross. What more strongly emphasizes the need for truly educative psychotherapeutics than that fanatical faith which now counts its disease-proof adherents by the hundreds of thousands? In true psychotherapy, it is not blind credulity or fanatical negation, but intelligent faith which is the essential factor.

Faith cures and Dowieism were but nineteenth century expressions of the old providential idea of disease and cure, which in all times, in more or less enlightened forms, has been one of the blessings and one of the cheats of religion. These cults relied upon the patient's faith in the divine, disregarding or ignoring the physical and chemical laws of health and sickness.

Today the medical world in general, and the psychotherapeutic world in particular, are keenly interested in the school of Freud. Long have clear-minded analysts realized the power of the persistent idea in influencing psychic disorders. Very ingeniously, and with great patience and skill, Freud has shown that dur-

ing the development of the human mind, in its efforts at homogeneity, many disturbing elements enter which are replaced, distorted, subjected to substitution, conversion or sublimation. In other words, the mind seeking harmony and comfort has various mechanisms and defenses for caring for irritating mental content, even as the tissues will wall off an infection to keep it from damaging the entire system, so well that even the brain substance may retain for many months an encysted infection. According to Freud's conception, many are sufferers from irritants thus unconsciously hidden in their mentalities, so that years after a moral injury, for instance, active, damaging, emotional reactions will occur in the presence of certain sights, sounds and sensations, and yet the patient be so far removed from the original damage as not to recognize the immediate cause of the disturbing reaction. Much light has thus been shed upon several forms of nervous disorders. It is now recognized that a large percentage of hysterical manifestations are but memory sensations divorced from the original damage, expressed by pains or discomforts or perverted feelings, recurring time and again as the result of sight, sound, ideational or tactile association.

As a practical outgrowth of this work, Freud has developed the truly helpful form of mental examination, psycho-analysis, by which through word association, the nature of the patient's reactions are ascertained with almost mathematical accuracy and the instinctive defenses ascertained. New associations are then formed until through careful, patient, really scientific effort the old mental hurt is brought to the surface and ventilated—the so-called mental catharses, not unlike probing, discovering and excavating a pus cavity. Unfortunately, this splendid work has been marred by its author's insistence that all these mental hurts are sexual in nature. While that primitive instinct has unquestionably, through prudishness, false modesty and sanctimoniousness, been handled with an almost criminal ignorance in our system of education, and while no careful observer questions its fundamental and potent influence upon human life and character, still, in the face of the vast number of other causes for fear and hatred, emnity and jealousy, of despair, remorse and cowardice, it is truly an astigmatic vision which sees in this great subject, Freud's conclusion, that "in a normal sexual life no neurosis is possible."

There are several helpful forms of therapy which owe their existence to the large amount of faith possessed by their adherents and the moderate physical benefits derived from their use, benefits not to be ignored in the conflict with disease. Hydrotherapy at one time was vaunted as a cure-all for the neuroses. It is helpful in so far as it inspires faith and through the definite and powerful circulatory influences resulting from its application. Allied to this, though much less beneficial, is electro-therapy. Long and tense has been the fight of its adherents for supremacy. Electricity cures the nervous sufferer in proportion to his faith in its effects. In addition, it possesses certain chemical and mechanical influences useful in a limited class of disorders. Osteopathy has received deserved recognition, because in a large number of psychic sufferers it was infinitely less damaging than drugs, while in its passive manipulations, with the frenzied faith of the manipulator, it has roused lazy muscles, loosened up stiffened joints and sent sluggish blood bounding. Thousands of the rich idle sick, daily piling up the toxins of inactivity, are given a temporary new lease on life and a few quaffs more of comfort, through the vertebra-adjusting, muscle-stretching, nerve-vibrating inaccuracies of ostheopathy.

We have seen that in man's world-old struggle for health one psychic element has ever been dominant. Faith is the magic word which explains countless mysteries, unaccountable cures, sudden recoveries; reveals the power of the ignorant priest, the charlatan, the quack of all ages; faith has transformed the most repel-

lant substances into healing charms; faith has made the hair of the dog the cure for his bite; faith has transformed certain letters, dates, combination of numbers into potent charms for health; faith has made the child born in a certain horoscope immune to a select list of diseases. The cures through faith have enriched thousands of shrines and bedecked with unspeakable wealth the dummy figures of departed saints. Faith has made the coffers of the patent medicine man to groan with fullness; faith has cast away a forest of crutches, banished myriads of pains; faith has blessed more lives, faith has saved more sick souls than any other single influence. Faith is the foundation of psychotherapy, false and true. Saint and sinner, sage and simpleton, derive equally the benefits from this mental attitude. Faith acts helpfully whether its object is true or false, worthy or unworthy, scientific or fanatical; faith makes man stronger, happier and healthier and should be his normal state. Faith is opposed to, and in proportion to its strength, neutralizes and dissipates the paralyzing, disheartening, disease-producing ravages of fear.

Rational Psychotherapy.—The day has come when the disturbing, damaging, damning influences of moral injury upon the physical and mental man are to receive that same earnest, patient, sane investigation and treatment by scientific minds as bacterial infection or tissue new growths. We have seen the almost irresistible influences of faith, even though its object is irrational or dishonorable, and while we recognize it as an indispensable essential to wholesome mental healing, we realize that other elements are essential. Faith in the false is in the end damaging. The young mother, under the spell of her belief that all disease is error, may resist medical treatment during the early hours of her diphtheria, possessed of the calm assurance that there is no such thing, and she and her young child will die as surely as though there had been no Christian Science. Faith must attach itself to truth, the true food of the mind. Ignorant enough we still are along many lines, but no day passes now that science does not wring from the eternal definite knowledge of some new truth, which becomes a part of its equipment in the fight for life.

He who is to apply the benefits of mental treatment must of all men be true. Deception, pretense, assumption, preventable inaccuracy of any nature reduces the psychotherapist to a charlatan. If to faith on the part of the patient in the best truth we know is added the will, which perseveres, we have the three essential elements of rational psychotherapy.

In the large number of those who are suffering from disintegrating and demoralizing moods and attitudes, those who are victims of corroding ideas, recognized or hidden, in that long, grim line of modern sufferers, the neurotics, useful activity has ceased to inspire normal, wholesome, stimulating, emotional reactions. The merchant dreads the thought of tomorrow's rush, the click of the typewriter sets the stenographer's nerves on edge, and the minister anticipates his Sunday work with an unexplainable depression, while the mother thinks of the return of her children from school with almost aversion, or the wife feels revulsion in response to her husband's affection. Action and reaction are out of joint, the duties and normal pleasures of life have become dreads, aversions, fears or disgusts and the emotional tone is perverted. Too frequently, in the same life, those acts which are in the end damaging, are followed by certain comfortable, satisfying emotional tones which make them a pleasure. The neurasthenic gluttonizes in the face of his weakened digestion; the sallow, pale-faced spinster drains cup after cup of her increasingly strong tea; the tense professional man is only comfortable when attached to his cigarette; the spoiled neurotic loses all pleasure in normal life and finally derives almost satanic satisfaction in spitting out meanness and the cheap sarcasms of perverted irritability. These are but examples of an endless variety of changed feeling tones so constant in the nervous, and the essence of a true psychotherapy is to dissociate the agreeable

feelings from the injurious acts and to restore the normal feeling tone to those activities which are constructive. When this is done a great burden of the world's sickness has been rolled away.

Faith, truth and genuine will development constitute the trinity which makes possible permanently constructive psychic treatment. All of the long list of the false forms of healing will, when tested by this ideal, show a deficiency in one or the other of these elements. Unfortunately, this perfect therapy can no more be acquired by the reading of text-books than can the manual dexterity of the ophthalmic surgeon.

The many miracles by faith have caused too many of us to expect to attain results through the miraculous. Truth demands attention to other elements of man's nature than his credulity. Truth demands an intimate knowledge of his physical mechanism and the needs of his psychical actions and reactions as well as the reality of his moral strength and weakness; truth demands that the defect, whether physical, mental or moral, be rationally, and oft-times sacredly, investigated and the remedy prescribed. Faith and truth, potent and seemingly irresistible as they are, must be held true to themselves by a perseverance which can only come through the developed will.

And so scientific mind cure is a higher development of the art of medicine, useless when separated from a definite knowledge of man's physical needs, demanding an adequate, practical psychological training and still imperfect until it recognizes and understands and can estimate the moral hurt.

The application of this thesis may be illustrated briefly through a few cases:

K. F. entered the hospital from his home in the Middle West for a definite period of treatment. He was 32 years old, had received his B.A. degree from Harvard nine years previously and had inherited large wealth. His occupation was a nominal secretaryship to a large financial corporation. He had married two and a half years previously and undertook treatment only because of his devotion to his wife. He had no hope of being permanently benefited. His father had died at 49 of cirrhosis of the liver, his mother at 26 of tuberculosis. Four generations on his mother's side and two on his father's had used alcohol to excess. The patient was first intoxicated when he was seventeen and a half years old. His sprees increased until for five years he had averaged three pints of whisky a day. He was a man of unusually well-developed physique, weighing 200 pounds and nearly six feet in height. He was heavy featured, with red face and soft heart. Taste and smell had been gone for a year; pupillary reflexes were sluggish, deep reflexes diminished, the morning nausea marked and the foul breath of alcoholism present. He had had two attacks of delirium tremens. On the way East he drank most recklessly and was practically comatose from alcohol upon admission. A frank attack of delirium tremens supervened and for several days he was a very sick man. Under hospital control his habits, food and exercise were directed into normal channels, while the usual tonic treatment given such cases resulted in a rather rapid response.

The man had an unusually bright intellect, but when he was finally able to give his history and was questioned as to his ideals and plans he expressed a definite belief that he was practically foreordained to die an alcoholic, as had his father and his father's father and his mother's father. He said he had studied the laws of heredity and alcoholism, and that there was no escape for him. His was a case of reckless despair. Incidentally, for his wife's sake, he would like to live a few years. A full statement was made of his physical condition and the damage which had resulted from his abuse of alcohol. With equal care the mental analysis was made and the strength and weakness of the psychic elements made clear; especially was his need of will development emphasized. His attitude to life and need for faith, for hope and for confidence in his own inherent good were forcefully pictured. Then came the assurance that the matter was not out of his hands, but with his new knowledge inspired by a living faith in the goodness which he loved in his wife and daily cultivation of self-denial and the gratuitous doing of the difficult that his years of dark despair, through his mistaken belief in the inevitable power of heredity, could be mastered. So inspired, this young man did his part. He had come to stay six months. At the end of a little over three weeks he announced his acceptance of these new conceptions and asked for his parole that he might demonstrate the strength

of his will with the aid of his faith in the truth of his release from fatalism. And so in a comparatively few days, through a mental change, this man turned from the life of a hopeless sot to an active, energetic and useful man of affairs and has so continued for over three years.

Miss D. was an orphan at eight. Six years were spent in a poorly equipped orphans' home. She was then taken into the childless home of a high school teacher, where she did house work, went to school and was taught instrumental music. While her life was not unhappy with her foster-parents, the narrow, almost mean atmosphere of the orphanage was continued in the small, uncharitable talk and table gossip of a home with very common ideals. The girl's naturally vivacious nature was repressed, particularly as she matured, became more attractive and realized that she was the object of a certain dislike and jealousy from her foster-mother. In this atmosphere, penniless and dependent upon the caprices of the household, she lived till she graduated from the small town high school. She then taught school until she had sufficient funds to take a year in music. Later she secured a position in a small denominational preparatory school. An attack of appendicitis, an emergency operation, an uncomfortable side for three years, a second operation to relieve the adhesion, and still Miss D. considered herself in good health. Next year a new principal came to the school. The two women did not agree, they were distinctly incompatible, socially, and had not a little friction in their work.

Miss D. was quite dependent upon her position, therefore, upon her lady principal, but her dislike grew until she became almost intolerant of her presence. Hand in hand with this growing dislike developed a series of physical disturbances, gradually creeping numbness of various parts of the body, attacks of "air hunger," increased exhaustability and seeming inability to take sufficient muscular exercise, while her teaching tired her inordinately. She was given the stock course of tonics, the inevitable strychnine, and finally referred for treatment. At this time she was 31 years old, fairly well nourished, sleeping well, appetite good, bowels regular, and disclaimed any known cause for her increasing weakness. She was started on rest treatment, and while she improved physically, nervously she remained thoroughly on edge; in fact, her nervous symptoms increased. Recognizing that there must be some hidden mental irritant, a psychic analysis was undertaken, which soon disclosed her antagonism toward her coworker. This antagonism had grown out of jealousy of the popularity in which the principal stood in the eyes of the school and resentment to the devotion which she received from the patient's favorite pupils. As the patient was a woman of Christian faith, though in the face of her early life her ideals were not fine, still she responded to the assurance that her hatred was her sickness. Her attitude toward her school, her fellow-teacher and herself was made clear through straightforward but kindly explanation and she expressed a desire to get right with her enemy. At the first opportunity she confessed the whole wretched story and asked pardon, which was freely granted. That day sunshine came into her life and with it physical comfort. And so, through a revelation of the truth, faith in the right and the will to do the hard thing, further medical treatment was rendered unnecessary.

Mr. C. W. was a youthful giant of nineteen, the son of a well-to-do German who brought up his boys under the military style of the fatherland. Instant, unquestioning obedience was the rule in that home. In fact, for years the father had so perfectly developed this idea that he always carried a whistle; one blow meant the oldest son, two the next and three the third, and for years when that whistle blew twice C. W. dropped whatever he was doing and ran dutifully to say, "Yes, father." When he was fourteen a boy visitor one day witnessed the whistle performance, and, as the boys went down town, he remarked, "Your father calls you like mine whistles for the dog." That instant resentment was born in that boy's heart, and for five years he never heard the whistle without an increasingly ugly reaction. But all of this was hidden, not even confessed to himself, ful in his father's successful livery business. In order to help in some building he one afternoon took one of the better horses to drive down to the wharf. His father definitely ordered him not to take the horse on the wharf, but the boy was in a hurry and disobeyed. Unfortunately, the horse's hind legs went through a rotten plank and he saw the fine animal struggling, with every probability of permanent damage. In his excitement he grabbed the horse's hind quarters and alone lifted him out of the hole. The horse's legs were skinned and an explanation must be made to the father whom he so feared and whom he had disobeyed. He had eaten rather heartily of a clam dinner. Very soon after the horse was rescued he was seized with acute nausea and vomited freely. Immediately after reaching home a sud-

den attack, convulsive in nature, caused the physician to be called, who diagnosed ptomaine poisoning and gave him an emetic and cathartic. This was the first of a series of seizures, increasing in severity, which were treated by morphine, hyoscine and sedatives. The boy at times was extremely violent and was removed to the city hospital, where during one of his attacks the resident physician, attempting to restrain him, was knocked down, the city fire chief, who happened to be visiting in the hospital, rushed to the doctor's assistance, as did his chauffeur, and were separately floored, and for the time the boy was in entire possession of the corridor. Nurses, orderlies and all who were able to move did so. His mother alone could control him.

In great distress, his father brought him to Asheville for treatment. On the trip he had been thoroughly narcotized and entered the hospital semi-delirious from morphine and hyoscine. The history was frankly suspicious and a tentative diagnosis of hysteria was made. The father was told to destroy the whistle and hereafter to treat his son as a biped, after which he was sent home with the assurance that the patient would probably not have more than two attacks. Everything was quiet for several hours, the patient being placed in a room with ordinary protection. Suddenly he jumped up, made a pass at his attendant and went head first through a window, carrying sash and light wire screen. His attack was on, and for several minutes he was all three well-trained attendants cared to handle, but was duly transported to an absolutely bare, thoroughly protected room, where, with an indestructible blanket, he passed the night entirely alone. The next morning he was shown how for years an increasing rebellion had grown in his heart, augmented daily by his father's thoughtless bullyism, and how finally, in the midst of the emotional intensity incidental to the horse accident, he had let go and all the accumulated antagonism stored in his marginal consciousness had revelled in active, forceful explosions, smashing, fighting and working physical damage to their infinite relief. As this analysis was made the patient manifested an intense interest. He was assured that he was in no danger physically, that he was not suffering from any form of brain disease or meningitis, which diagnosis he had overheard a nurse make but simply hysterical outbreaks. Told that he would be left absolutely alone for twelve hours after each explosion, he realized that he was now up against it and could only beat the air of his protected room. Finally he was promised that after three days without disturbance, and with manly co-operation, he would be returned to his old room and freedom. Truth inspired faith and the surroundings stimulated his will. His recovery was thereby in a few hours practically assured. He has been a perfectly normal boy since. His father in a kindly way made things right, for the abuse of his authority and unconscious enmity has been replaced by genuine friendship.

CONCLUSION.

And now as precise methods are entering into the domain of psychic therapy, accurate results may be expected in the treatment of that unending list of physical disorders, which are but the discordant music wrung from a responsive body, through the touch of the fingers of a disordered mind. Scientific psychotherapy is not an exclusive system of healing; it is merely a department in the development of modern preventive and curative medicine. Psychotherapy should be associated with mental and physical and moral hygiene, with proper medication, with productive occupation, with wholesome scientific dietary, and helpful hydrotherapy. Still, as it touches the true man, not the machine, but the master, it has in it that which should inspire our highest, noblest, truest and best. Psychotherapy is the medicine for sick souls.

THE NEGRO, A PUBLIC HEALTH PROBLEM.*

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In presenting this paper I wish at the outset to state that I appreciate fully the magnitude of the subject as well as my inability to more than touch upon certain points to which the attention of the sanitarian is most frequently directed. Throughout what follows it will be quite evident that my object has been rather one of query and suggestion than of solution.

It must daily occur to the Southern health

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officer that there are operating, as causes of mortality among the negroes of each community, potent factors which are so little understood as to almost preclude any intelligent efforts at control. Indeed I know of no portion of the great problem of health conservation in which our armamentarium is so completely lacking in effective weapons as that concerning the unduly high negro mortality and its relation to the white mortality in our section of this country.

In preventive measures amongst our own race, throughout those countries in which modern preventive medicine is practiced, there are recognized certain fundamental and fairly definite methods of procedure. These methods are of course changing from year to year, but their development is in the nature of a continuous and logical evolution. When, however, we try to apply these same methods in preventive work among the negroes, it is almost as if we had entered a foreign land expecting our own language to convey our ideas to its people. We find ourselves, in fact, confronted by an alien, and not only does this racial difference render our task most difficult, but this very alien has been but recently transplanted to conditions of life which are entirely foreign to his nature. To our own ignorance of him is added his of his surroundings. His value in the labor market is probably better understood than any other of his attributes, but, even while fully appreciating how far sanitation has lagged behind other sciences amongst our own race, it is almost inconceivable that in view of our close association with the negro in the South we should have made so little effort to keep in sanitary touch with him.

This may appear to be a sweeping statement, but it is based upon comparative figures that are startling and that I fear may be but partially explained by the claim of racial inferiority. In a review of the annual reports of the health departments of nine of the larger Southern cities I find that the negro, as a health problem, is discussed at some length in but one, that of Richmond. In the other eight, outside of a casual mention in two, the only evidence of his existence is shown in the bare figures of the mortality tables. I feel that we are justified in assuming that this absence of mention is a fair measure of health conservation efforts in his behalf.

A glance at the mortality statistics of the U. S. Bureau of the Census should serve to direct our attention most forcibly to the problem which confronts us. The mortality rates given for the registration area of this country are, for 1911, 1373.7 for the whites against 2396.0 for the negro per 100,000. This great disproportion affects the total mortality of the registration area but slightly, the total figures being 1415.9, but it must be remembered that but a small portion of the South is included in the registration area, only three States. Were the whole South, with its universally high negro mortality, within this area, the death rate of the country would be considerably higher.

Another fact strikingly illustrates the apparent inadaptability of the negro to life in our larger cities. This is the marked difference shown between his death rate in the registration cities and that in the rural portions of the registration States, 2604.3 for the former against 1890.2 for the latter. Or to present this in another manner, the death rate of the negro in the registration cities is 714.1 higher per 100,000 than his death rate in the rural portion of the registration States, while the white death rate in the cities only exceeds that of the rural districts by 119.5 per 100,000.

For further comparison I have chosen fifteen cities of the North, East and West and nineteen Southern cities in which the negro comprises 10 per cent or more of the total population. The North, East and Western cities chosen were Los Angeles, San Francisco, Wilmington (Del.), Chicago, Indianapolis, Kansas City (Kan.), Leavenworth, Boston, Kansas City (Mo.), St. Louis, Columbus, Carlisle, Philadelphia, Cincinnati

and Covington. For the Southern cities Birmingham, Mobile, Montgomery, Washington, Jacksonville, Key West, Atlanta, Savannah, Lexington, Louisville, New Orleans, Baltimore, Wilmington (N. C.), Knoxville, Memphis, Nashville, Charleston, Norfolk and Richmond.

In these two lists I have compared the average white and colored rates per 100,000. Those cities of the North, East and West give us an average white mortality rate of 1478.2 against a white rate of 1690.4 for the Southern cities, while the colored rates are 2430.5 and 3087.5 respectively. A comparison of the white and colored rates of these two groups of cities show for the South an excess in the white rate of 212.2 and 657.0 for the negro. In other words, the death rate of the Southern negro as compared with the Northern negro is more than three times as high as that of the Southern white over the Northern white.

Granting that the poorer equipment of the South in sanitary matters will account for the increase in the white death rate, it still remains difficult to explain why the same conditions should apparently affect the negro to a so much greater extent. The South has come to be regarded as a more natural habitat for the negro than the North, but these figures would indicate that the negro thrives better in almost any other section of the country. To this it may be objected that for the greater part only the more intelligent negroes, and hence those better equipped to protect themselves against disease, seek homes in the North, while those mentally and physically more deficient remain where they find themselves and add their constitutional weaknesses to outside factors contributing to their mortality. Such an explanation would be comforting to a degree, but I feel that it will not wholly explain the discrepancy. It would appear instead that in the North the negro lives under better sanitary conditions and is affected by closer and better organized supervision than in the South. The truth of this assumption is borne out, I believe, by a comparison of the mortality rates of the two races per 100,000 from certain causes.

Still using the figures from the cities named and for the year 1911, I have chosen nine important causes of death, typhoid fever, pulmonary tuberculosis, measles, scarlet fever, diphtheria, whooping cough, pneumonia (all forms), diarrhoea and enteritis (under 2 years) and congenital debility. These causes are commonly considered preventable with the exception of the last named. An average of the mortality rate from these causes for the two races shows that in the Southern cities the white rate is 4.4 higher than the white rate in the Northern cities, while for the negroes of the South the rate is 14.1 higher than for this race in the Northern cities. Presented differently, we find that from these causes the Southern negro loses 146.6 per 100,000 more over the Northern negro than the Southern white does over the Northern white. The details are shown in the following table:

Average Rate Per 100,000 Certain Causes.

	North, East and Western Cities.		Southren Cities.	
	White.	Col.	White	Col.
Typhoid	21.1	35.3	54.8	71.9
Tuberculosis lung	149.2	447.7	137.6	395.5
Measles	7.9	4.6	20.4	15.3
Scarlet fever	10.3	3.8	3.9	0.7
Diphtheria	15.6	15.4	12.6	7.4
Whooping cough	8.2	19.5	19.5	54.2
Pneumonia	142.2	276.4	109.6	310.1
Diarrhoea and enteritis	67.7	89.1	94.8	142.2
Congenital debility	79.4	87.2	88.0	158.1

A scrutiny of this table shows that tuberculosis of the lungs affects the Southern negro proportionately less than the Southern white whereas pneumonia (all forms) causes a far greater proportionate loss among the Southern negroes than among the whites. As an explanation of the apparent anomaly in these two diseases of the respiratory system, both of which cause an unduly high mortality among the negro race, I would suggest that the figures for tuberculosis are possibly influenced to no small degree by the fact that this disease is usually excluded from those for which com-

panies, insuring negroes, will pay a death claim. At least I am aware that in Jacksonville it is not at all uncommon to find malaria or some other incorrect cause named on the death certificate of negroes so insured, where pulmonary tuberculosis was the actual cause of death. This factor would unquestionably apply to a greater degree in the South where the larger portion of the negro indemnity insurance is carried on. Not only might the death rate from tuberculosis be lessened but that from pneumonia be, for the same reason, increased. I mention this merely as a tentative explanation.

Whooping cough shows a marked predilection for the Southern over the Northern negro, while the other acute contagious diseases of childhood tabulated, measles, scarlet fever and diphtheria, do not figure largely in the mortality rates of either race. Diarrhoea and enteritis (under 2 years) serves to augment considerably the Southern mortality rate, especially in the case of the negro, 89.1 for the Northern negro against 142.2 for this race in the South.

Under congenital debility and malformation we find the greatest sectional variance of all. In the Northern cities named the negro rate from this cause is but 19.5 more per 100,000 than that of the whites, while the Southern negro rate exceeds the white by 70.1 per 100,000. While this cause of death is not to be classed as preventable, in the ordinary acceptation of the term, yet we are forced to admit that physical surroundings, social and economic influences, occupations and customs, housing and institutional provisions, in other words modern sanitary supervision, unite to augment or lessen the number of deaths thus classified, nor is it possible for us to explain away this immensely disproportionate rate on the grounds of inherent racial weakness.

I shall not attempt to explain or answer the questions implied in the above general considerations. These are matters that may only be settled after years of united study and observation on our part. A statement, however, of a few specific, local facts and figures may prove of interest as offering in some small degree a partial explanation.

In Jacksonville for the five-year period, 1908-1912, inclusive, the negro death rate has been 23.0 per 1,000 as against 14.9 for the whites. For the same period the negroes have shown a birth rate of 17.31 per 1,000, 5.7 lower than their death rate, while the white birth rate has exceeded the death rate by 3.5 per 1,000. During the past four years, 1909-1912, still-births have constituted 13.80 per cent of all negro births and 6.29 per cent of white births. Aside from the influence of congenital weakness in this high still-birth rate, there enters another factor of importance and one obtaining, for the most part in the South, namely the practice of midwifery. For the four-year period named the still-birth rate in the practice of the midwives has been 15.62, that in the practice of physicians 8.21. Nearly all the negro babies are delivered by these women and their ignorance operates chiefly against this race, though it is felt to some degree amongst the whites.

It is needless for me to attempt to picture to this gathering the woeful shortcomings of the negro "granny." Her influence extends beyond the confinement bed and we find her a common and sole attendant upon the negro babies during the early months of life and no small number who escape her upon their entrance to life, succumb to her later ministrations. Tetanus, obscure "convulsions," "teething," "hives" and "colds" appear with disquieting frequency upon the death certificates of negro babies above the signature of this midwife or that, while ophthalmia of the newborn and fatal infection of parturient women follow in her wake at all times.

A further reference to the death certificates of Jacksonville for the past five years (1908-1912) shows that of all the negro deaths (exclusive of violent deaths and suicides) 16.88 per cent occurred without medical attention, while of the whites dying during this period

only 4.48 per cent were unattended by a physician. To this total absence of treatment in 16.88 per cent of negro deaths must be added a very large percentage receiving scarcely better service at the hands of physicians of their own race. I can only speak for my own city, but there, at least, may be found as fine a collection of ignorance among the negro physicians as one might care to view. Not only does their paucity of intellect and training enter as an unquestioned factor in a high mortality, but their mercenary motives are daily evidenced by the fact that, however grave the condition they may be treating, their visits are, for the most part, numbered by the fees collected at the door of the sick room. Their patients seem to expect no more and, throughout the dangers of typhoid, pneumonia, infantile diarrhoeas and other grave infections, appear contented with a weekly or biweekly visit, and whatever the outcome, it is accepted as inevitable and with cheerful indifference by the family.

In this connection I may say that we are solving in some measure these two problems by the employment of a negro district nurse who follows the midwives and cases of reportable diseases and undoubtedly secures for such cases more careful medical attention, as her connection with the health department puts the attending negro physician on notice that we are in close touch with his case and his methods. From our experience during the past two years with colored district nurses, I am convinced that, in proportion to the amount expended, no other single means is more valuable in lowering the death rate of this race, especially that of infants. Nor does it fill a less important role as a means of sanitary education. No white man or woman can do this work, in the far South, as well as can a colored nurse, providing her mentality and training are adequate to the requirements.

I can not close this already long paper without reference to the high mortality rate of the negro from communicable and preventable diseases as shown in the following table. These figures are for the five-year period, 1908-1912, of Jacksonville. Divided as our population is almost equally between the two races, we offer an especially favorable community in which to make these racial mortality comparisons.

DISEASE	1908		1909		1910		1911		1912		Avg. Rate	
	W	B	W	B	W	B	W	B	W	B	W	B
Typhoid (residents)	20	25	20	23	31	16	18	8	1	9	6.45	5.42
Malaria	5	18	7	28	2	29	6	35	5	10	1.72	8.03
Measles	1	1	0	1	0	0	6	3	2	0	.59	.24
Scarlet Fever	0	0	0	0	2	0	4	0	0	0	.40	.00
Whooping Cough	3	6	0	9	0	5	2	0	0	2	.32	1.48
Diphtheria	2	0	3	0	1	1	4	2	1	3	.77	.33
Influenza	1	6	2	3	0	4	3	8	2	8	.51	.59
Tuberculosis (lungs)	53	142	40	111	19	95	48	100	34	102	13.35	36.64
Tuberculosis (other forms)	2	2	10	4	3	3	10	8	6	0	2.19	1.16
Venereal Diseases	5	12	2	24	0	9	7	32	1	31	1.06	6.91
Pneumonia	28	57	34	44	24	57	23	43	17	43	8.83	16.21
Diarrhoea (under two)	9	11	9	6	13	36	28	43	18	25	5.27	8.00
Diarrhoea (over two)	25	24	24	27	5	7	8	15	5	7	4.75	5.39
Totals	154	303	151	280	100	262	167	297	92	240		

These causes are responsible for 40.1 per cent of all negro deaths as against 29.3 per cent of white deaths. Were as large a percentage of negroes as of whites attended by physicians and were the diagnoses of the negro physician more accurate I am confident that this negro toll to preventable disease would show still greater. I feel that not only is the negro mortality of the Southern city increased by these diseases from the lack of preventive measures amongst this people, but that the white mortality and morbidity is raised by these same causes, through their

prevalence in the other race. To quote from another paper on this subject:

"These negro citizens, amongst whom we find such an undue prevalence of diarrhoeal diseases, tuberculosis and venereal infections, who live under the worst of sanitary conditions, through circumstances, racial inferiority and our neglect, mingle with us in a hundred intimate ways, in our stores and factories, our kitchens and nurseries. They knead our bread and rock our babies to sleep in their arms, dress them, fondle them and kiss them; can any one doubt that we may not escape this close exposure? The missed and carrier cases of typhoid and other intestinal diseases that wait upon our tables must exact their toll nor is this lessened by any habits of personal cleanliness discernible."

In conclusion I would state that the burden of this great health problem must devolve finally upon the Southern sanitarian and sociologist. It has, I believe, been sadly neglected by us all in the past and yet it is most intimately concerned with the welfare of the entire South; accurate observations, careful social surveys, experimental methods must all play a part. No field is probably so barren of sanitary achievement as this and none offers a more worthy occasion for painstaking effort with promise of far-reaching results of the utmost import to the Southern states.

DISCUSSION.

Dr. Fred J. Mayer, Opelousas, La.—In approaching any problem in hygiene and state medicine, whether the inhibition of mosquito or fly life, soil pollution, food and drug adulteration, vital statistics, drainage, or eugenics, we find that all roads lead logically to one point, viz., the education of the public in the true cause, nature and prevention of communicable diseases, and particularly in the relation of insects and animals to the public health.

As was said by the great Kentuckian, Lincoln: "With public sentiment everything will succeed; without public sentiment nothing will succeed. Consequently he who moulds public sentiment goes deeper than he who enacts statutes or pronounces decisions; he makes statutes possible to be enacted." Shall we go a step further and say, after enactment possible of execution?

In so far as the negro is concerned in his relation to public health, it is but one phase of that sinister problem that looms large and lowers low on the horizon. Speaking as an ex-white leaguer, who has served his apprenticeship in preventing the Africanization of the ballot-box in his native state, and therefore not to be misunderstood, I have no hesitancy in declaring that now that the negro is removed from the plane of political action, his social and political status as a child race thoroughly understood and settled forever in the South, we are confronted with a sacred duty, the duty of improving his material welfare and especially his health. Of course, as a carrier and transmitter of disease, he is a standing menace to the white race, and therefore self-interest points to this improvement, but I prefer to place it on a higher plane than self-interest and to view it as a humanitarian duty. Duty, in the words of the South's most venerated chieftain, is the sublimest word in the English language. The question then arises, is the negro susceptible of being educated in the fundamental principles of hygiene? We have had the affirmative proofs in Louisiana in 1905 and 1906, where along with the whites he was led out from the fallacious fomites theory of yellow fever transmission into the true mosquito doctrine and did yeoman service in exterminating stegomyiae, the epidemic being suppressed before frost, and a recrudescence the following year prevented for the first time in epidemic history.

We should, through our boards of health, and other educative agencies, start an educational movement among them on hygienic lines, through illustrated lectures and especially in their churches, secure the co-operation of their preachers in teaching them the A B C of hygiene and especially that "Cleanliness is indeed next to Godliness," and by pointing to the twenty-third chapter of Deuteronomy, warn them of the sinfulness of soil pollution. We should also improve their houses, making them healthful instead of the existent dens of filth and contagion, which they now are. In Louisiana Dr. Dowling, the eminent head of our health service, intends after the carnival season starting such a campaign, which doubtless will bring forth good fruit in an eventual lessening of morbidity and mortality rate among the negroes and reflexly affect beneficially the white vital statistics.

Dr. R. M. Cunningham, Birmingham, Ala.—I did not expect to be called upon to take part in this discussion. I regret very much that I did not hear the paper, but the negro problem embraces its hygienic and sanitary aspects, as I understand, and if that is the case, it is one of very great importance. I caught enough of the last gentleman's remarks to get the drift of the discussion. We have practically sterilized the negro, and therefore it is up to the white people to do his voting and make for him the best possible conditions.

I have had considerable experience in practice among negroes around public work, and I am free to confess I have left alone all those that did not have the rudiments of sanitation, and hence their education is of very vast importance. My personal observation has been, however, that with the exception of tuberculosis and lobar pneumonia, they have been a rather remarkably healthy people, notwithstanding I do not know how to account for it. We have a good many cases of typhoid fever among them, but it is rare, and malaria also

is rare, notwithstanding the presence of flies in abundance and mosquitoes. Whether this is an acquired racial immunity that has been gradually developing for years or not, I do not know. But I do know that to be a fact, and I know that appendicitis is not rife in the negro race. I made that statement before a meeting of the Southern Surgical and Gynecological Association, and they all jumped on me. I have had as part of my clientele from 1,000 to 5,000 negroes embracing a period of thirty years, and I must say that appendicitis is one of the rarest diseases with them. I explain that in this way: The work in which I have been engaged for thirty years is contract practice; the negroes pay so much a month and get the value of their money, and it is their constant practice to take pills at least once a week, particularly compound cathartic pills. In my judgment that accounts in a very large measure for the few cases of appendicitis. Possibly of other diseases that is not so much the question.

Where I have been for thirty years the employers of this labor have taken up the question of sanitation and hygiene and have employed experts for the purpose of teaching these people. We have at Ensley and throughout the district the property of the Tennessee Coal & Iron Company. Dr. Nolen, who was at Panama for a number of years, has charge of the general proposition, and the company has screened the houses, drained the ponds, and has issued bulletins on sanitary methods. I remember there was one written on flies about a year ago in relation to the spread of disease, and another one on mosquitoes, and the people took considerable interest in these articles In the cities and in the country the regulations have to be enforced, and the law is enforced by the legal officials. I have been struck with the remarkable manner in which these people are controlled by the law; how they take an interest in the law and its enforcement. When the superintendent or foreman of this great corporation says, "Johnny, this house must be cleaned up or you git," he immediately cleans the house. And that is what counts with the negro race. It takes authority to execute these things and that is being done.

In my work at Ensley we have what was once the old Birmingham, but now the Greater Birmingham, embracing Ensley and Wylam, an incorporated city, and just across the railroad, northwest of the works, are the convicts' quarters, absolutely under the control and the authority of the officials of the Tennessee Coal & Iron Railroad Company. We have had but two or three cases of typhoid fever in the quarters, as we call it, in a year, either in the white or black. We had a number of Italians that came from Mississippi and located on the white stream, and they were the hosts of malaria. There were a few mosquitoes, and from this intermediate host there was quite an epidemic among the white people, but not among the negroes; whereas in Ensley, and in parts of the Greater Birmingham now incorporated as one of the villages of the state, we have not had a great many cases of typhoid fever, notwithstanding we have good sewerage, whereas in the quarters we have the dry system, but it has a system of closets which are cleaned, disinfected and the filth is removed and destroyed. Now, there is no comparison, as we all know, between the wet system of sewerage and the dry system when left to the people to execute them, but with a man behind them with authority to tell them to make a move or to get off the premises, it works well. I do not know just how much education has done towards this very great revolution, but I know authority has done a great deal for them, so that I believe in solving the problem of the negro race, and in considering every possible relation of life, we should consider him as a part of the white man's burden, and we should all do what we can for him in every particular. Where I am living the negroes work around public works, the schools are being conducted properly, the public playgrounds are being kept clean, and the houses are kept in good sanitary condition, and they are taught personal hygiene, and whatever the reason is, with the exception of lobar pneumonia, to which the negro race as such is particularly predisposed, whether in the aggregated or segregated relation, we have had wonderful success. I believe education should be carried on through the preachers and the negro doctors; that mass-meetings should be held and illustrated lectures be given. If you show them pictures and point out the practical application of sanitary and hygienic measures, you will accomplish something.

Some work has been done along the line of prevention of the social diseases, with no success, nor will there be success in that particular line for years to come. But along the line of infectious diseases being transmitted through the air or body hosts, or through carriers, something over which there can be co-operation and control, we have had wonderful success.

Pneumonia is as yet, as we all know, the crux of the medical profession. We do not know how to prevent it. We do not know how to treat it. We know more about it than Hippocrates did as to the means of its propagation, but we do not know much more about the treatment. It is particularly fatal in the negro race, and it is one of the things we have to deal with.

Tuberculosis is diminishing. I do not know why. For many years I was physician to two large prisons that employed 1,000 or 1,200 men. Thirty years ago tuberculosis prevailed to the extent of 80 per cent among these people. The history of these cases was that there was a chronic nidus somewhere either in the lungs or lymphatic glands. Under the environments then existing we found cases of acute tuberculosis. I saw then a good many cases of typhoid fever, but typhoid fever is diminishing. There are not so many cases of glandular tuberculosis among the younger generation as there were twenty or thirty years ago. You do not find as many scars on the necks representing healed scrofula, which we know now to be tuberculosis. With the white folks I do not know what has done this. Negroes spit on the street and in public places, and we know disease is communicated in that way, yet authority is being exercised in regard to that. But you cannot watch everybody. Upon the whole, the negro question in relation to sanitation and hygiene, where there are white men in control, who know themselves what ought to be done, and who have the authority to hire others to do it or to get off the premises, is working well.

Dr. Henry S. Hanson, Jacksonville, Fla.—There is one feature in connection with the negro as a source of infection not only to the white people with whom he comes in contact, but his own people, to which I desire to call attention, and while Dr. Cunningham was speaking of malaria among the negroes and the relatively few clinical cases of malaria among them, that does not however mean that the negro cannot be a source of infection to white people with whom he comes in contact.

In the State Board of Health in Florida we made a number of determinations among apparently healthy schoolchildren as to the presence of malarial carriers. We found that among from 500 or 600 schoolchildren, white and black, from whom we had taken blood smears, and who at the time showed no symptoms of malaria, an average of about 4 per cent of malaria carriers among the children; they harbored the sexual forms of the tertian and estivo-autumnal parasites. In one section we found that in one school we had 33 per cent of carriers among the negro children; 9 per cent of these harbored estivo-autumnal parasites. This, of course, indicates they can be prolific sources for infection of mosquitoes, who bite them, and transmit the disease to the white population. Every one who has gone through the negro hovels of the larger cities and seen the unsanitary conditions under which most of these people live can have no doubt as to their being a source of infection to the children whom they nurse and care for. As has been said, they have not very exalted ideas of hygiene or cleanliness, and wherever the infectious intestinal diseases prevail, such as dysentery or typhoid fever, it is easy to see how these people can carry these infections over into the kitchens of the white families where they are employed as cooks or as nursemaids.

Dr. D. M. Molloy, Manila, Philippine Islands—As a visitor I should like to add just a few words to the discussion of this paper. I am heartily in accord with the sentiments expressed by the first gentleman in discussing it, namely, that of the duty of the white man to the negro. We cannot fail to take cognizance of that great democratic principle under which the humblest individual in a community is taken into account in all efforts to prevent disease in that community and without it no community can be said to be protected.

The question raised by Dr. Krauss, that of the individual danger of negroes in their relation to the white people is one of the most important things brought out so far in the discussion of this negro problem as a health problem. We have had a great deal of experience in the Philippine Islands (and I may say here, I am from the Philippine service and our work in the Philippine Islands is principally among Filipinos and as regards sanitation and education in sanitary matters they do not compare favarobaly in some respects with the negro race in the South), and we have for some years recognized that the ignorance of the ordinary Filipino servant did not constitute a danger to himself alone, but it constituted a grave danger to the white people in the Philippine Islands who are laboring for his welfare and attempting to eradicate diseases from among the people. We have, of course, in the Philippine Islands taken into account the protection of the races against certain tropical conditions which prevail there. For instance, amebic dysentery was the bete noir of all Americans in the early days of the Philippine Islands. Many of the civil employees, soldiers and many people in various walks of life in that country contracted chronic amebic dysentery and were invalided. Recent work has convinced us that much of our effort to prevent amebic dysentery among the white inhabitants there was directed toward the wrong source. The white people in the Philippine Islands would contract amebic dysentery after having observed all of the usual precautions, and the question would naturally arise, where did they get it? They boiled their water; they did not eat uncooked foods; they excluded raw vegetables from their diet, and possibly protected themselves against flies and other carriers of infection; yet numerous individuals contracted amebic dysentery. We have recently learned that intestinal amebiasis is very prevalent in the Philippine Islands, and it may be said the great majority of Filipinos are ameba carriers. The amebae may exist in the intestinal tract of an individual just as typhoid bacilli may exist in the intestinal tract of man without actually producing the disease, amebic dysentery, in that individual, and yet he is a great menace to the people with whom he comes in contact on account of the fact he is a carrier of amebae; and since through his ignorance he is careless in his habits he constitutes a grave danger to the white people whom he serves. This is particularly true of the negro in the South. We all know, the negro in the South comes in close contact with the white people in the capacity of servant, and in many instances he is thrown into closer personal contact with the white people than the white people are thrown in contact with one another. In that way he constitutes a grave danger to the white people as a carrier of disease.

Dr. Litterer in the discussion on milk referred to an epidemic of typhoid fever at Athens Female College, and a carrier was responsible for this epidemic of eighty-nine cases. This carrier, as he told me, was a negro who was employed as a domestic in this college or as a servant in the dairy from which they got the milk. This negro servant was responsible for this very acute epidemic of eighty-nine cases of typhoid fever in that institution, and I believe he told me there were eight deaths. This is likewise true of malaria. We know malaria is comparatively rare among the negroes in one respect, as Dr. Cunningham has said, but most of us with large experience with malaria know that certain people, certain individuals, may act as repositories for malarial infection, and they themselves not be suffering from acute attacks.

I believe that the negro, while not actually suffering from clinically pronounced malaria, constitutes one of the greatest difficulties to be encountered in any organized effort to eradicate malaria from the South, on account of harboring malarial parasites, thus constituting repositories for the malarial infection, sources from which the mosquito may become infected, and thus convey the infection to the more susceptible white people among whom the carrier lives.

Dr. R. H. von Ezdorf, Mobile, Ala.—I have been studying one special disease, malarial fever, among

the negroes and white people, and I have been doing this work with a view to establishing a malarial index in some of our Southern states. I find that the negro is a very receptive individual in the educational side of preventive medicine. He wants to learn something about it, and I have been frequently invited to discuss before negroes the subjects of malaria and other diseases with special reference to the methods of prevention. In the talks I have given in colored schools I found the teachers as well as the children were very much interested in this subject. If we are to begin with the education of these people we ought not to lose sight of the schools and ought to do what we can to help and educate the youths, and particularly the negroes in the schools. In some of the cities and towns where I have been I found that they were not provided with the best facilities for schools, and in some places the amount of appropriations are limited and proportioned by taxation; that is to say, where a negro pays a small tax, they are given a proportionately smaller appropriation for educational purposes. When we make an inspection in our towns in the South we will find the negroes are living in the outskirts, where the houses are built on cheap lands and the houses built cheaply. You will find them where the land is not properly drained, nor provision made for proper lighting, water supply and sewerage. Who is to blame for that, I would like to ask? We are trying to educate them to bring about the best sanitary conditions, and yet these are the conditions the white people provide for the negroes. It is no wonder we find these unsanitary and unhygienic conditions, and until they are remedied it does not seem to me that we can accomplish much except through education, and endeavor to have them do what they can for themselves individually. For the sake of the general good we must certainly make better provisions for their living.

With reference to malaria, I have found in taking indices in the South that the negro is a larger factor in spreading infection than a great many imagine. I find a larger percentage of carriers among the negroes than I do among the whites. Some years ago I practiced in the North, and my belief and idea was that malaria did not exist among the negroes; that they were practically immune. However, when I came South I soon learned I was wrong and have since been able to confirm the fact that the disease is quite common among the negroes, and that the negro is a larger factor in spreading the disease than we have heretofore believed.

Dr. J. A. Stucky, Lexington, Ky.—I am very sorry all of the papers of this symposium were not read, for the reason I wanted to hear what each man had to say on each subject, to enlighten our brothers across Mason and Dixon's line, who are asking important questions about the negro. Living as I do on the border line here in Lexington, I cannot answer the question from a distinctive standpoint of the true Southerner. I am in hearty accord with all that has been said, and especially with what Dr. Cunningham has said. Somebody must get behind the negro with authority and tell him that he must do so and so or "git." We must do the same thing with the poor white trash. The poor white man must clean up or get out, and self-preservation, if for no other reason on earth, demands that we scientists, we humanitarians, should give these negroes a fair deal, a square deal, and a fair chance, and teach them the sanitary laws that are so necessary not only for their own protection but for ourselves, because they are carriers of disease.

One question that I would like to ask and have answered is, although it may be out of place, with regard to enlarged tonsils and adenoids. I am often asked more particularly by physicians in the North whether we find diseased tonsils, adenoids and mastoid disease in the negroes of the South, the same as we find these diseases in the whites in the East and Middle West and the North. Up until six or seven years ago I answered no, we do not. But in the last five or six years I am meeting with a larger number of cases of young negro children, especially the mulattoes, with enormously enlarged and diseased tonsils and adenoids, and I have had more mastoid cases to operate upon among the negroes in the last five or six years than in all my previous medical experience. I would like to know if the present way of living of the negro in the South has anything to do with the lymphatic diseases that are on the increase. We do not hear so much about scrofulous diseases. We know what they are. I would like to know if the nose and throat men are meeting with a number of cases of diseased tonsils and adenoids, and if they are meting with a larger number of cases in the negro with mastoid complications that require operation.

Another thing I have noticed here in Lexington in the last five or six years is, that I am meeting with a larger number of negro children who need glasses, who have refractive errors, who cannot get along at school until the refractive error is corrected. Are you meeting with these cases in the far South? If these questions, Mr. Chairman, are out of order, I wish you would so rule, but I should be glad if some of you who live far South would tell me what your experience has been in regard to these diseases, so that I can tell the practitioners in the North who ask me questions in regard to these diseases.

Dr. H. H. Martin, Savannah, Ga.—In answer to what Dr. Stucky has said, in my own town, Savannah, the population is a litle over 50 per cent negro, and probably 90 per cent of these are blacks. I think I can safely say that enlarged tonsils and superfluous adenoid tissue in the throat is very rare. I have service in the negro hospital of about one hundred beds or something like that; I visit the institution almost every day in the year, and I do not recall in thirteen years fifty cases of tonsil operation or operation for adenoids. I can recall but three mastoid operations on negroes, and these were specific necroses. In my work on the ear, nose and throat I find 90 per cent of the cases among negroes are syphilitic; that the ravages of syphilis in the colored race do not seem to be so great as in the white, and they yield more promptly to treatment. But I repeat, that 90 per cent of these people who come under my service have this disease, either hereditary or acquired, mostly acquired.

In answer to the question raised by Dr. Krauss as to the danger of a negro communicating diseases to the family for which he works, I think

it more imaginary than real. Why, I do not know. I have often wondered when I see so many young girls who have syphilis, who are nursing white children, and I see young men, middle-aged men, who are cooks and waiters in restaurants, and grown men and women who are about houses as negro servants, as they are in the South, why there are not more diseases transmitted or communicated to white people, but I can now recall but one single instance where disease was communicated, in my town, from a negro to a white family, and that was smallpox. I have had the members of my white families ask me when they send a negro to my office (and I must tell them that negro has syphilis), "Must I keep this negro in my employ?" My answer is, "Yes, why not?" They are afraid the negro will communicate syphilis to the family. Theoretically that is possible, but there has never occurred within my knowledge such a thing except in the one case I have mentioned.

The other question brought up by one of the speakers is one that has been on my mind during this entire discussion. Dr. Cunningham says we must get after these people with authority, and Dr. Stucky says we must do so with the white, while Dr. Mayer spoke of educating them. In my visit to the poor white people and poor negroes in my own city I find the negroes physically better than the whites; but they are huddled and crowded in tenements, in houses not fit for human habitation, and one of the most important methods that this or any other organization should advocate is creating a higher state of physical well-being among the negroes. The members of our profession should do this, and try to influence the people who build and rent houses to these people to construct better houses.

Dr. Stucky wants to know about refractive errors in negroes. My experience has been that negro children require glasses in the same proportion as white children. Unfortunately for them we do not give them quite as much time as we do the white children, but whenever I had occasion to examine a negro child's eyes for refractive errors, I have found them in the same proportion as among the white.

One other point in my experience, and that is trachoma. You know trachoma is not very communicable, but I have not in my fifteen years of experience in Savannah seen a case of trachoma in the negro. I have seen plenty of cases of ophthalmia neonatorum, but never one single case of trachoma.

A Member—I have had some experience in treating negroes. I believe we all recognize the importance of the negro as a carrier of disease.

Answering Dr. Stucky's question, I can say that I have been finding a lot of diseased tonsils among the negroes, but not so many cases of adenoids. I recognize the negro as a pretty good imitator, and they have about the same diseases as the white people. I believe we can accomplish a good deal for them by education. They want to do the best they can, and we should prepare places for them to live with greater comfort and with special reference to hygienic and sanitary measures. I am sure, by directing our attention in this direction, we can accomplish a good deal.

Dr. V. H. Bassett, Savannah, Ga.—I would like to say a few words with reference to the possibility of infection being conveyed from servants to members of the family, and on family hygiene. As Dr. Martin has said, I think the number of instances of infection from servants to families is small when one considers the instances of infection among these people, but they do occur, and some of the saddest cases we see are those of syphilis innocentium, or syphilis in the innocent, that occurs through such infection. I saw a little fellow, a three-year-old child, brought in from the country with a lesion on the tongue. On examination this proved to be a primary syphilitic lesion. The father and mother were healthy,. Examination showed that the colored nurse was syphilitic, and there is no question the child contracted that infection from the nurse.

I also saw during the past year two cases of tuberculosis which developed in a child within a year after a nurse had been dismissed, who had afterwards died with tuberculosis. The general principles should be carried out that servants in the family should be under the medical care of the family practitioner, and as a matter of family hygiene it should be insisted that every colored or white servant be examined before being engaged in work and then being re-examined at frequent intervals. This would prevent infections passing from the servants to the members of the family, and they should be examined especially for two diseases—tuberculosis and syphilis.

Another point with reference to family hygiene is this: I believe it is bad practice to allow soiled linen to leave the household to be taken to the house of a colored woman for washing. It is bad practice to let soiled linen go out of the house to any other house. It may go to a well-conducted steam laundry. The washing should be done in the house or sent to an up-to-date or modern steam laundry. In my trips of inspection I have seen clothes soiled which had been laundried, spread over the bed, with a tuberculous patient on the bed spitting freely about him. As a matter of family hygiene, the soiled linen should not go from the house to the house of a negro woman to be washed, but it should be sent to a steam laundry.

POST-OPERATIVE CARE OF ABDOMINAL CASES*.

By G. C. Rodgers, M.D.,
Elkins, W. Va.

In discussing this subject it is not my intention to take up any special treatment in detail; neither do I care to take up the treatment of emergencies, but instead I want to discuss very briefly some points in the care of the common, every-day laparotomy cases, which are too

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often turned over to the tender mercies of a nurse who doesn't dare go beyond a certain routine, or worse yet into the hands of some interne fresh from college, who knows all of the laboratory tests and classic symptoms, but couldn't tell the facies of pneumonia from that of peritonitis or the stupor of toxemia from that of normal sleep, and yet the surgeon wonders why he occasionally loses a case for which he cannot account; but judging from my personal observation of many of our large clinics and hospitals, the wonder to me is that they do not lose more.

These accidents will continue to happen and the conditions will not be materially improved until the surgeon learns that his patients need as much skill and experience after an operation as they do at the time; in fact, I have stood by the bedside of more than one post-operative case where I found it much harder to decide what was best to be done, than I ever found it standing by the operating table. When the surgeon realizes that his responsibilities do not cease when he has performed a complete and successful operation, but that he owes those patients his time and superior skill just as much after the operation as he did at the time; then I think we will have some decided and radical canges in the post-operative treatment.

I wish to call your attention to a few things that I think I have learned from a careful observation and study of these cases; with some of them you will all agree and with some of them I find myself badly in the minority. We will take an average case in the operating room; immediately, on the completion of the operation, she should be wiped dry about the face and neck, if sweating, completely wrapped in a blanket and taken to her room without any delay. The room should be fresh and thoroughly ventilated, but the temperature should be a little higher than that of the operating room for at least a short time. The patient is placed in a previously warmed bed, but, except for some special reason, is not put between blankets, but is covered with one or two light, all-wool blankets. Now, as a routine, she is given 750 cc. of normal salt solution, which is repeated in four hours. If she has not had oxygen on the table, it should be given now, as it seems to be pretty well established that with oxygen they wake up quicker with the mind clear and with less tendency towards nausea. A competent nurse is left by the bedside with instructions to make her patient comfortable; if she wants a pillow, she gets it, or if she wants two, she gets them; if she wants to lie on her side, she is turned, and when she wants water, it is given to her—the quantity governed by her thirst—but not more than one-half of a glass at a time; if she suffers much pain or is very restless, she gets small, repeated doses of morphine until comfortable and quiet.

I know that water is withheld by many, but I have never been able to find any scientific reason for doing so, and with ten years' experience I have not been able to find any practical reason for not giving it. I am thoroughly convinced that it does not increase vomiting, but if they do vomit, they do it with much more ease and at the same time wash the ether-soaked mucus out of the stomach even better than it can be done with the stomach tube. The water does not only wash out the stomach, but it has a tendency to open up the kidneys, the sweat glands and, in fact, it helps to dilute the poisons and flush out the whole system.

As to the morphine, I know there are several objections offered against the use of it in post-operative cases. The ones most frequently heard are that it masks the symptoms and locks up the secretions; the first objection seems very feeble when we consider that it will only mask pain and possibly ward off a shock, for I do think morphine, properly given, is one of the very best things that we possess for combating shock.

As for the pain, the morphine is usually withdrawn before we could expect any complications that would be ushered in with pain and besides, the pains of a surgical case are

too vague to be of much importance. As to its locking up the excretions, I don't think that has ever been very well established, from a clinical point. Some of the best mortality tables we have in eclampsia are from the men who use morphine, yet the excretory organs are supposed to be taxed beyond their capacity there. Morphine is given freely and routinely with spinal analgesia, and I have watched it very carefully after several hundred stovaine analgesias, and fail to find any objections to it. It does not affect the excretions of the kidneys, neither the liquids nor the solids, so far as can be detected, and the bowels act as readily as the cases that get no morphine.

There has been a great deal written lately about spinal analgesia both pro and con, but I have seen no objection to it on the ground that morphine was given as a routine with it, and it is certainly a fact that a patient who is comparatively comfortable, quiet, confident and getting the normal amount of sleep will have a better chance to make an uneventful recovery than the one who is suffering pain, constantly trying to get a more comfortable position and becomes worried and nervous about her condition.

The diet is fruit juice and carbohydrate in character and the time of starting is governed by the patient's desires; my experience has been that the most of them miss about two meals, some more, but many of them only miss one, and, with few exceptions, they go on general diet list the third or fourth day. I think experience will convince any one that a diet of fruit juice and carbohydrate is far superior to that of a proteid nature. It is a well-known fact that nitrogenous substances must be peptonized and that peptones make ideal culture media in which numerous bacteria thrive, predisposing the patient to gas and toxemia. Personally, I have never been able to find any satisfactory reason for the early giving of laxatives and cathartics in these cases. In all laparotomies the bowel and peritoneum is handled more or less and there is more or less of an inflammatory condition, and according to the laws of physiology all acute inflammations should be given perfect rest. It has been shown that magnesium poisoning, following the use of mag. sulphate in post-operative cases is far more frequent than was previously supposed, and neither is it without its fatalities, and I personally came very near adding one to the list.

Again, physics in these cases are uncertain so far as their intended action is concerned, but are much more certain to produce nausea, increase gas and make the patient generally uncomfortable. We never bother about emptying the bowels until after the third day, and then no laxatives are given until the bowels respond well to an enema.

Acidosis, a condition in which the alkalinity of the blood is reduced and its abilty to absorb carbon-dioxide impaired, seems to occur much more frequently than was at one time supposed.

Early purgation and withholding of water from anaesthetic cases both predispose to this condition. The free use of water and soda-bicarb. seems to be the best treatment. Soda-bicarb. should be given persistently and in full doses; if the patient has already begun vomiting, it had better be given by rectum.

Bainbridge declares that a plentiful supply of carbohydrates, not only in post-anaesthetic intoxications, but also as a routine preventive measure before operation, would be a rational treatment.

It is unquestionably true that diabetics will recover more rapidly and with fewer complications if put on a moderate carohydrate diet after operation.

Another undesirable practice on these cases is the indiscriminate use of the catheter; of course, this never happens in our hospitals, but we have seen just such cases come from the other fellow where the life of the patient was rendered almost unendurable for weeks or months or possibly longer, due to improper use of the catheter. It is better to let these patients go fifteen or even eighteen hours unless the bladder becomes much distended, be-

fore resorting to the catheter, and then it should only be used by one thoroughly competent.

DISCUSSION.

Dr. H. T. Inge, Mobile, Ala.—Mr. Chairman, I consider the subject as of the very greatest importance. I am willing to admit that surgeons frequently do more damage in after treatment than they concede. It is my practice after all surgical operations to leave the patient, as far as I can, for twelve hours and not see him. I believe that the more we do in post-operative cases the worse it is for the patient. I believe if the operation has been done quickly and the patient leaves the operating table in good condition, that nothing can be done but to let him alone.

I cannot agree that the use of morphine after an operation is not harmful to the patient. I have used it and I have never used it that I did not regret it. It is harder to establish the normal secretions of the patient after the hypodermic use of morphine than it is without the use of morphine. We naturally expect every patient, after a surgical operation, recovering from the effects of the ether, to be in pain, to be disagreeably uncomfortable, and, if we go about that patient and listen to him, it is the most natural thing on earth that we should give him something to relieve his pain and suffering, when, in reality, he has no more pain and suffering than he could tolerate; and, if left alone, within a short time he could go off to sleep without the use of morphine.

I believe if the patient has been put back to bed and the operation has not been of an extremely exhausting character, that all we have to do is to watch the condition of that patient and let him alone.

One condition the gentleman did not speak upon. If he did my attention was distracted from it at the time—the necessity of our watching the condition of acute dilatation after these operations. I have seen some of the most alarming symptoms develop from acute dilatation of the stomach following an operation of, possibly, a minor character. The pulse grows rapid, the surface is cold and clammy, the patient is in a state of extreme prostration, and it is a study with the surgeon as to whether there is not some hemorrhage existing producing this condition. However, a careful analysis of the case will differentiate between hemorrhage and the condition of dilatation, and when you have satisfied yourself that it is a case of dilatation, and the stomach tube is used and relieves that condition, your patient is all right. It is the quickest relief that one can find in such cases.

The patient who, but a minute before, would look as though he was in articulo mortis, recovers at once after the stomach is washed and a little weak solution of bicarbonate of soda or salt solution left in the stomach.

But I believe we do more harm in listening to the patient and trying to relieve him of suffering than if we had left him entirely alone.

Dr. Joseph McDowell Mathews, Louisville, Ky.—I think this is the most important part of the treatment of surgical cases. I believe, like the previous speaker, that we overtreat, usually. A man can get into the habit, possibly, of giving stimulants after every operation—which is absolutely unnecessary. When it is necessary to give a stimulant I think possibly camphorated oil the best stimulant we have.

I believe, in certain cases, where they are suffering intense pain, and very restless, that small doses of opium will do no harm, and oftentimes, in the after treatment, I give my patients small doses of opium for from the first 12 to 24 hours.

I think people are liable to suffer too long for the want of water. In a very short time after the operation, after the patient awakens, we can commence to give him a little hot water and increase it right along. If the patient is nauseated, give him a quantity of hot water, and let him vomit up, and wash the stomach out in that way. If he continues to vomit of course there is nothing like the use of the stomach pump. It is a life-saving measure, and gives the patient a great deal of relief.

Another post-operative treatment that I don't believe in is to try to keep the patient in one position. I think the patient should be allowed to turn about into the position the most comfortable, with possibly two exceptions.

One of the worst things we have to deal with is acute dilatation of the stomach. The use of the stomach pump is very necessary with the change of position, with the face forward. Some means like that will often get them over the nausea.

Dr. George R. Livermore, Memphis, Tenn.—I think if our cases are thoroughly prepared prior to operation we have far less trouble afterwards.

I do not agree with Dr. Inge in regard to morphine not being harmful, for we know it locks up toxines in the system and the locking up of toxines at such a time is unwise.

I think the thorough preparation of our patient beforehand and a quick operation, in which no raw surfaces have been left in the peritoneal cavity, diminishes the pain wonderfully. This has always been my contention that morphine was very harmful, following an operation; and if the patient is thoroughly prepared beforehand, with a good calomel purge first, followed by some good intestinal antiseptic for some time prior to the operation, pain, distention, and all of its concomitant symptoms following the operation are greatly diminished.

Dr. Herbert Acuff, Knoxville, Tenn.—I should like to add just a few words in connection with the shock, pain, and nausea, referred to by the essayist.

In a series of about twenty-five cases, including ten hysterectomies in which we have used and observed the use of anoci-association—that is, local anaesthetization of the skin and tissues with one-fourth per cent novocain solution and quinine and urea hydrochloride solution—we do not have the post-operative shock and pain that follows the old-time laparotomy. The reason for this is obvious. Since the skin is perhaps the best and most rapid transmitting medium of impulses to the brain, and since we all concede that anaesthesia simply ties the spinal cord, thus prevent-

ing movements, while the subconscious mind continues to receive these painful impulses produced by the trauma of the surgeon, it is only natural to assume that if the medium which transmits these impulses were temporarily thrown out of commission by blocking the skin with local anaesthesia, that the pain and subsequent shock to the central nervous system would be interdicted.

Upon opening the peritoneal cavity, having anaesthetized the skin fascia and pre-peritoneal surface, the peritoneum proper is infiltrated around the incision with quinine and urea, the meso-appendix, in in appendectomies, the broad ligaments in hysterectomies, salpingo-oophorectomies, etc., are likewise infiltrated. This method produces a minor degree of anaesthesia for several hours after the operation until the system has regained itself sufficiently to withstand the small amount of pain which may follow.

Another prophylactic measure in shock and pain is to avoid the unnecessary manipulation of intestinal viscera. Surgeons are unanimous in the belief that every time you touch the bowel you cause pain.

Regarding morphine, I want to register my protest against the indiscriminate use of this drug; but certainly, if there is any blessing in medicine, it is to relieve pain, and if there is one time more than another when this is desirable it is when the patient is returning from the hazardous and trying ordeal of a surgical operation. With the use of the anoci-association but little, if any, morphine is required, but when it is I think small doses are preferable to allowing the patient to work himself up to a nervous fit.

Using the nitrous-oxid anaesthesia, which is the coming anaesthetic of modern surgery, the patient is prevented from nausea and vomiting which ordinarily follows the ether anaesthetic. In case this does occur, a couple of glasses of lukewarm soda water will relieve the situation and prevent the dreaded dilatation which, in the event it does come, is best managed by heroic use of gastric lavage.

Dr. J. D. Chason, Bainbridge, Ga.—When it is possible to give a laxative before an operation my experience is that that laxative should be given at least twenty-four hours before the operation. Giving laxatives immediately before operation is one of the causes of nausea.

As to the use of the purgative, castor oil is one that I use, because it does not weaken the patient, for if a patient is to undergo such a thing as a laparotomy, we should not use anything but castor oil; very little food, and sterilized food, to be given thereafter.

As to the use of morphine, I believe, in the majority of cases, one-eighth grain with 1.150 gr. atropin before the anaesthetic does no harm; it takes less anaesthesia, the atropin prevents the secretions in the stomach that often cause trouble with acidity and gas thereafter; but after the operation is through with, to ward off shock, I believe in the use of normal salt solution, according to the necessities of the case—if it is one or two hours apart, according to the amount of relaxation present after the operation is completed.

I would not suggest the use of morphine when I could possibly avoid it, because there is always gas in the intestines after every operation, more or less, and I believe it makes it more difficult of removal to use morphine.

Dr. J. S. Ulman, Natchez, Miss.—In regard to the question of after treatment, I think it well to start catharsis by means of enemata. I think you will get a more natural peristalsis and less likelihood to have post-operative obstruction. Usually soapsuds repeated every three hours as necessary will give your patient a comfortable movement, which, when followed by oil, clears up the whole situation.

So far as morphine is concerned, I don't think any conscientious physician would give it as a matter of routine, but, on the other hand, I do not see how any one could have a hard and fast rule for or against it. Certainly in many cases you have to use it.

In the treatment of post-operative vomiting, posture and fluid, given according to the request of the patient, will do a great deal to prevent it. Water is given to the patient ad libitum; and as soon after he wakes from the anaesthetic and asks for it. I have seen some cases where an ideal preparation beforehand has failed to prevent it. I have seen other cases that we have had come to the table without any preparation—emergency cases—that have had no vomiting at all. In some cases where the stomach tube has failed, I have seen as much as one-twenty-fifth grain atropin tone up the stomach and prevent dilatation.

Dr. Cohn—I arise to add a few words in regard to this matter. The gentleman who described anoci-association said that it was like tying a string around the spinal cord and not letting the impulses get to the brain. I think that is one of the things which is very important. We have to keep those impulses from getting to the brain.

In regard to the use of morphine, I recently had occasion to talk to Dr. Sloan, one of Dr. Crile's assistants, who has done a great deal of this work with Dr. Crile, and to quote him: "Crile, in the last thousand cases, has a mortality of eight-tenths of one per cent." He told me that they considered morphine the sedative par excellence in post-operative treatment. Some of us forget that a great deal of the pain suffered is due to pressure on the peritoneal surface, because many believe that it is in the parietal peritoneum that we have our terminal nerve filaments, and if we relieve the distention, in many instances, by rectal irrigation, we get rid of a great deal of that pain.

Dr. Crile also lays a great deal of stress on not purging your patient to death—bringing them to the table with their vessels empty instead of full, having to fill them up afterwards with infusions instead of letting them have the infusion which they already have. If you give them violent purgatives two or three days before you bring your patients to the table in a condition to be shocked—already exhausted—then you insult them a little bit more and your patients are shocked. If you do not insult him so much beforehand, he will probably take his hat off to you very much sooner afterward. So I believe we should not purge the patient too much nor too persistently for several days before, and I do believe if we find our patient's pulse getting a little rapid, we can do more

with a hypodermic of morphine than you can with strychnine. If you give strychnine to a patient in a state of shock you are whipping your horse, who is carrying too much already. Rough handling which produces raw surfaces causes many cases of obstruction which are blamed on morphine.

So I would call attention to the fact that Dr. Crile, who is considered a conscientious surgeon, and whose results I believe are better than most people's (show eight-tenths of one per cent mortality), gives morphine where he has tried to make comparative results of the patient's pulse after the operation, and the patient's sister standing on the outside in about 100 cases, he found the patient's pulse increased not more than ten to twenty beats to the minute and the sister on the outside, anxiously waiting, getting all the benefits of psychic shock, her pulse went up to 120 or 140. That was not one case but one hundred. A great many things are called shock which are not shock; so I am in favor, in many instances, of using morphine—to use something to relieve the cause of the pain, by rectal irrigation or what not. In other words, to relieve the distention and keep away whatever psychic influences we can and not to use too prolifically the strychnine and things like that when we think the patient is shocked, and a little hypodermic of morphine we think would do them good.

Dr. H. P. Linsz, Wheeling, W. Va.—I am sorry I was not present when the doctor read his paper. I feel that the post-operative treatment of abdominal cases is of as great importance as the diagnosis of the case and the actual operation itself; in fact, if as much care is exercised in making your diagnosis before you operate, there would not be so much necessity for post-operative treatment.

I want to add my protest against the late administering of laxatives. I think that laxatives should be given, not later than one or two days prior to the operation. Keep your patient quiet and do all you can beforehand.

As for water after the operation, I believe if the patient is given water the effect will be beneficial.

Dr. J. H. Blackburn, Bowling Green, Ky.—Speaking particularly about cases that have the preparatory treatment—not the emergency cases—when I had my hospital training the patient was not permitted to turn from the back for forty-eight hours. Last week I heard Goldstine, at Chicago, remark that a particular patient who had been exhibited that day as a hystorectomy for fibroids was out of bed on the third day and left the hospital on the sixth day. It seems to me to keep them absolutely flat of the back for forty-eight hours, or to let a hysterectomy get out of bed on the third day are both extremes.

I think we should, as the essayist said, be careful and watchful. We must use the means that are indicated, and in these latter days of noci and anoci-association I do believe morphine, properly administered, is one of the most valuable aids we have in the relief of those nocuous stimuli that tend to bring on the post-operative shock. I have never seen any ill effects from the proper use of morphine—not in massive doses—one-half grain, because the patient was a little uncomfortable; but I do believe we should see those cases, not at the end of twenty-four hours, as Dr. Inge suggests, but frequently. I believe morphine is a great aid in helping to make the patient comfortable and preventing the ill effects that may arise.

As to water, if we give that with the much used Murphy drip, with the shoulders slightly elevated, then there is not going to be the indication for the administration by mouth. I do not believe the administration of a glass of cool water, to be vomited up, will do the patient the harm that six to eight hours of retching and vomiting will do, like when I got my training. It was inhuman to keep the patient from water for that length of time, when they were vomiting all the time.

I do want to register myself as in favor of the proper use of morphine and water.

Dr. J. G. Gaither, Hopkinsville, Ky.—It seems to me fair today to take up the question of anoci-association. Everything that is new that is brought forward is grasped and carried forward by leaps and bounds, sometimes without due consideration to everything.

The secretary spoke of injections of quinine and urea solution—and I recall several years ago I had the misfortune to suffer with chronic malaria while practicing in Mississippi, and I was treated by hypodermics of quinine and urea, and I should certainly think to inject tissues, such as the broad ligament, would irritate them.

It seems to me that anoci-association may gain something in critical cases, but in the average case that comes for simple ovariotomy or an appendectomy you waste considerable time to infiltrate the skin and the various tissues as you go through, and, altogether, unless you are gaining a great deal—and most of these simple cases have gotten along very well in years gone by—that anoci-association should certainly be reserved for the critical cases. I heard one of Dr. Crile's patients say he suffered more from the case of exopthalmic goitre—he suffered three days from the urea injection—than he would have without it.

It seems to me we take these new methods that appeal to us because they are something new.

Dr. J. A. Danna, New Orleans, La.—I wish to place myself on record as against the use of morphine as a routine measure.

The picture before my mind in the handling of an abdominal case after operation is that I operate in the abdominal region; that I have traumatized those parts and that I want to keep those parts quiet, just as I would put an arm in a splint after operation. Now there are many things that have to be considered in keeping the intestinal tract and the abdominal cavity quiet. The first thing is to empty that tract in the beginning—of that which supposes a reasonable amount of shock and the least amount of draining away of fluids from the body, and the ideal thing for the purpose is castor oil. If you give castor oil too soon before operation—at too long a time before operation—if you give it twenty-four to forty-eight hours before, in order to get the effects of an empty bowel, you have to keep that tract empty during that time; so you should find the exact time the castor oil should be given. Let your patient go on and feed up to a little over forty-eight hours before the operation. I give one ounce of castor

oil at about 6 o'clock in the evening, and usually operate at 7, 8 or 9 o'clock the next morning. If that bowel is kept still and your patient is kept still a sufficiently long time after operation, you will have little or no shock; you will not have a patient complaining about gas. I say to my nurses when a patient complains about gas—it is their fault. What causes gas? Either you have an intestine full of food which ferments—we know it does not ferment in two to six hours—and you have peristalsis. What is the one agent that will accomplish everything without any further effects? It is morphine, and I do not believe anything will beat morphine in doing it. Give your morphine immediately after your patient wakes up, and give him or her a sufficient dose to relieve them at once. Do not wait for twenty-four hours after operation, as one of the men who discussed the paper said, but go to her and say, "Everything is all right. You are just perfectly fine. We are going to relieve that pain, and you are not going to suffer any more." Give that dose of morphine, and if you relieve it at first there will not be any necessity of giving a large dose later on. I am not afraid to give one-fourth grain and repeat it in two hours afterwards, and that usually has the desired effect.

Two things that are usually done tend to increase the necessity for morphine—the attempt to irritate the patient and increase peristalsis, and the cleansing of the intestinal tract by the giving of enemas.

With my charity patients I never have any trouble, but in other cases the nurses are trained to the danger of giving morphine, because it might mask the symptoms and might cause the tying up of the secretions.

Dr. Rodgers closes—Gentlemen, I thank you all for your general discussion of this paper; I realized that I was inviting your criticism and didn't get more than I expected.

In reply to Dr. Inge, I wish to say that I know from the literature, that acute dilatation and some of the other emergencies to which he referred sometimes happen; but having had no personal experience with them, don't feel that I should discuss them. However, when we get out of some of our old ruts and learn to treat each operative case as an individual, giving them some of our own personal attention, then I think we will relegate many of our present post-operative complications to the pages of medical history that should never have been written.

Acute dilatation is supposed to be due to some form of shock, or, at least, some reflex nervous phenomena, and I can't conceive anything that would better predispose to such a condition than a continuous pain hammering at the nerve centers, and especially if you add to this nausea and restlessness, all of which can usually be put in complete abeyance by a few small doses of morphine and atropine.

In regard to the anoci-association, my personal experience has been too limited to give an expression, but to abolish pain and protect the nerve centers should be the first aim of every surgeon, and I trust the anoci-association as advocated by Dr. Crile will prove ample.

At present I am partial to stovain anaesthesia and believe it is the coming anaesthetic; it amply protects the nervous system, and, as a rule, these patients are all quiet and comfortable after an operation.

Now, for the morphine, that great "goblin" of so many surgeons, but which I believe is the greatest friend we have when properly used, I would like to ask the gentlemen who have so bitterly condemned the use of morphine, how many weeks and months they have put in having accurate tests made of the excreta of patients who have had morphine in small doses, and this, in comparison with a goodly number over the same period of time who did not have it, if by such experiments, they can show that the average excretions for a number of cases that got morphine was below par, while a similar number under similar conditions who did not get it, was up to normal, then they may have some right to condemn it on that ground. From considerable investigation along that line, my conclusions have been the reverse.

I agree with the gentlemen on my left, that there is nothing quite so good as castor oil with which to clean out the bowels before an operation, but think it should be given so the bowel will have time to drop back to its normal condition before the operation; I can see no use in irritating a bowel with physics just before operating.

A REPORT OF UNUSUAL CASES.*

By Estill D. Holland, M. D.,
Hot Springs, Ark.

Gentlemen, this paper does not pretend to be anything but what its title implies, namely, a report of exceptional cases.

First, I wish to report a case of gallstones in a woman about 32 years old who afterwards gave me the following history:

For the last six years she has had a constant tenderness in the region of her gall-bladder. At times this tenderness would become so acute that she could not wear a corset for days at a time, and had to walk and stand leaning slightly forward and to her right. At other times she was able to dress and even to dance with comfort. Two or three times a year she would have, what she called, bilious spells when she would be confined to her bed, very nauseated and unable to eat a thing for days at a time. She had never passed any gallstones that she knew of

Patient Miss X. was taken violently ill on the night of September 29, 1913, with intense pain in right lumbar and epigastric region. Intense

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nausea and vomiting. Patient could not get me on 'phone, so called another physician who gave her a hypodermic injection of morphine, which only relieved her slightly.

I saw patient for the first time the next afternoon (September 30), and found her vomiting and very nauseated, but not suffering any great pain. She could not bear to let me touch her in the region of her gall-bladder or in her intercostal angle. Patient said that she was better than she had been for twenty-four hours and seemed to feel that her crisis was over.

Patient did not have any fever, and I concluded that she had very likely passed a gallstone and was over the worst of it. I gave patient some sodium bicarbonate and magnesium oxide powders with directions to take one in each glass of water that she drank, in this way hoping to neutralize the acidity of her stomach contents and quiet her vomiting.

I did not hear any more from patient that night, and did not see her until the next afternoon, when she seemed a great deal better, and showed me three gallstones that she had vomited, and had only noticed from the fact that she heard them strike the bottom of the vessel into which she was vomiting. The largest of these stones was flat with square corners. It weighed two grams and was exactly 1.7 c.m. square, with one side slightly convex and the other side concave. The other two stones were smaller than peas.

Patient's nausea was greatly relieved and she was able to retain a little water, the first for forty-eight hours. The tenderness over the gall-bladder was decreased, but it was still too tender to distinguish anything by palpation.

Patient had no fever and I decided that since she had passed this large stone, and vomited it, the chances were that she had passed a great many more stones which were in her intestines, and that her gall-bladder must be empty. I did not consider that there was any immediate nenessity for an operation in her weakened condition.

Patient's bowels had not moved since the day before I had first seen her, as she could retain nothing on her stomach and enemas did not do her any good. I had telegraphed for some peristaltic hormone, but it had not arrived, and in the meantime I gave her a large dose of castor oil, which she retained.

Patient did not suffer any that night and when I saw her the next afternoon (October 1) her bowels had still not moved, but she had vomited eight more small stones, none of them as large as a pea. She had had no intense pain and only slight nausea with this vomiting. Patient had taken a few spoonfuls of milk and retained it.

I gave patient another large dose of castor oil and she spent a very comfortable night. The next morning (October 2) she had a bowel movement and passed seventy gallstones, six of which weighed over a gram apiece and all of which weighed seventeen grams.

Patient felt well; the tenderness over her gall-bladder was greatly diminished and on palpation the bladder seemed to be empty. She was up and walking around and very anxious to be taken off her diet.

Patient got along uneventfully for the next three days. I had to leave for Kansas City on the 6th of October, and did not return until the 8th. The afternoon of the 9th of October patient's mother called me and said that patient was suffering intensely. I went right out to their house and found that there was something lodged in her rectum, which was too large to pass. With the aid of a little vaseline, a spoon handle and some manipulation I was able to extract the object, which proved to be a gallstone of a roundish shape weighing 10.5 grams and measuring 9.5 c.m. in one circumference and 9.3 c.m. in the other circumference.

This young woman had not really had a very severe attack of pain since the night before I saw her the first time and she had never had a rise of temperature at any time when I saw her. She has seemed to be in good health, with a good appetite, regular bowel movements and good digestion ever since October 2, with the exception of the pain caused by the rectal passage of that one big stone.

I think that this is a plain case of adhesion of the gall bladder to the duodenum followed by a slough of the adherent surfaces of the gall bladder and duodenum with the establishment of a large fistula between the two viscera. This patient was never jaundiced as she would almost surely have been had the common bile duct been obstructed by the passage of any of these large stones. There was a constant trace of bile in her vomit which also showed that there was drainage.

I think that this adhesion must have taken place in the first half of the duodenum, as she vomited these eleven stones, and there was never any trace of fecal vomitus.

A month after the passage of these stones patient seemed to be in good health, no ten-

derness over gall bladder and all her organs functionating properly.

I do not cite this case as proof of any new method of treating gallstones, but to show why every one who had such troubles before the days of aseptic surgery did not die.

The next case that I wish to report is one of a second syphilitic infection within a year.

I know that some of the best syphilographers write that they have never seen an authentic case of a second infection with syphilis, and while I am positive that I have had two cases in the last year, I only have the conclusive proof in one of these cases, and that is the one I wish to report in full.

Mr. S., aged 27. February, 1911, patient noticed sore on penis, which he treated for two or three weeks without being able to notice any improvement. Patient consulted Dr. Schwartz of Kansas City, who scraped the edges of the sore and demonstrated the spirochetae pallidae in the serum which oozed from the scraped place. Dr. Schwartz told patient that he had syphilis and patient decided to come to Hot Springs for treatment.

Patient arrived in Hot Springs March 26, 1911, with a typical case of secondary syphilis—mucous patches in mouth, macular eruption over body, enlarged cervical, epitrochlear and inguinal glands and the chancre still on his penis.

Patient remained in Hot Springs under treatment from Dr. T. E. Holland for nine weeks, during which time he used nine ounces of mercury in inunctions and took potassium iodid.

Patient left in good condition, so signs of syphilis and most of his glands down to normal. He was instructed to continue treatment with mercury pills after leaving here, but only did so for about three weeks.

Patient remained well for several months, but returned in January, 1912, with a sore tongue and other mucous patches in his mouth. We gave Mr. S. a bath direction this time and he treated himself, taking thirty-two inunctions of two drams each. We did not see Mr. S. again until March, 1912, when he returned with ulcerated tonsils and mucous patches in his mouth. His Wassermann was XX positive. March 11, 1912, I gave Mr. S. a full dose of salvarsan intravenously and he left Hot Springs two days later.

Patient remained well all through the summer of 1912, and did not notice any manifestations of syphilis. The last of November, 1912, patient noticed a small sore on the foreskin of his penis, and although it had been about three weeks since he had exposed himself to infection he thought that it was a hair cut and burned it with a stick of caustic.

Sore continued to enlarge and get worse, and he burned it every few days without any beneficial results.

Patient arrived in Hot Springs December 29, 1912, with an indurated chancrous sore on the tip of his prepuce, inguinal gland on right side slightly enlarged and tender. I scraped the edge of this sore and by using India-ink I was able to demonstrate the spirochetae pallidae under the microscope.

Satisfied in my own mind that I had a case of second infection with syphilis, but wishing to be doubly sure, I took a specimen of this patient's blood and sent it to the American Research Laboratory at St. Louis for a Wassermann test. Two days after sending the blood, and while still waiting for the report, this patient began to develop a typical, well-marked macular eruption, and I received the report January 9, 1913, saying that the Wassermann showed XXX positive.

This patient's history and symptoms were so typical that under ordinary conditions a Wassermann test would have been entirely unnecessary to establish a diagnosis.

I immediately started treating this patient with salvarsan and mercurial inunctions and he left town in a few weeks in apparently good condition. I heard from him eight months later and he had had no trouble.

This is a case in which there is no doubt of the correctness of the original diagnosis. There is no doubt of a secondary sore which followed exposure at about the proper incubation period, and which showed the spirochetae pallidae, and which was in turn followed by an eruption at about the proper time.

The only argument one might offer is that the positive Wassermann might have been positive from the first infection, but in that case how would one account for the primary and secondary manifestations of the disease coming on in their proper sequence?

I think that this is one case in which one full dose of Salvarsan cured the patient, which, in itself, is enough to classify this as an unusual case.

The third case that I wish to report is not

so unusual, but offers quite a contrast to the previous one, and shows that I have reason to know that one or two doses of salvarsan do not always cure a patient of syphilis.

Mrs. B., aged 35. Had been married for ten years and has had a skin disease ever since she was a baby—was told that she had scurvy. She has had five miscarriages and two other children that only lived a few days each. Husband was always healthy until married, but has had the various symptoms of syphilis since his marriage.

I saw Mrs. B. first on January 9, 1912, when she presented the appearance of a bad case of psoriasis very generally distributed over her body and face, her nose especially being affected. The little finger on her right hand had lost its nail and was scarred and drawn until she could not bend it.

Mr. B. showed a few tubercular syphilide over his arms and legs. I had a Wassermann test made on both of these people and Mrs. B. showed positive XXX, while Mr. B. showed positive XX.

January 12, 1912, I gave Mrs. B. a full dose of salvarsan, after which I gave her inunctions of mercury for eleven days, followed by another dose of salvarsan on January 24, 1912.

I gave Mr. B. one dose of salvarsan on the 13th of January, and then ten inunctions of mercury. These patients had both been drummed to another physician when they arrived in Hot Springs, and as I did not get them until their stay was half over I had to hurry the treatment more than I would otherwise have done.

Both patients left Hot Springs February 1, 1912, entirely cleared up and in good condition.

November 2, 1912, Mrs. B. gave birth to an apparently healthy baby, which has never been seriously sick and does not show any symptoms of syphilis.

In August, 1913, Mrs. B. began breaking out again and she arrived in Hot Springs on September 30, 1913, with a squamous eruption over her face, arms and legs. Her Wassermann showed a XX positive.

She brought her baby with her and on its first birthday it was able to stand alone and take a few steps without falling, seemingly normal in every way.

When one takes into consideration the number of miscarriages this woman had had with the death of two children soon after birth, I think that this baby offers an interesting history considering the short time the mother was treated and her subsequent relapse.

NASAL TAMPON TREATMENT OF SINUS DISEASES AND OCULAR COMPLCATIONS.*

By J. Ivimey Dowling, M.D.,
Albany, N. Y.

In the *Homeopathic Eye, Ear, Nose and Throat Journal* for June, 1910, I published an article under the title, "Nasal Tamponades, an Original Method of Treating Ocular Diseases." This was a brief description, with citation of cases, of a method purposing to drain the accessory nasal sinuses and thereby influence inflammatory conditions of the eyes.

In *Ophthalmology* for April, 1911, appeared a brief paper, entitled "The Relation of the Anterior Ethmoid Region to Diseases of the Eyes," in which I endeavored to emphasize the importance of that special area to diseases of the eyes and report clinical cases benefited by operation, the results supporting the view that the anterior ethmoid region is an important factor in causing many ocular diseases.

The first describes a simple method, applicable by any one familiar with intranasal anatomy and able to employ a nasal speculum and place a tampon *under full illumination with the aid of artificial light.* The second paper suggests surgical methods for the purpose of affording satisfactory drainage to the frontal and maxillary sinuses and anterior ethmoid cells. Only the skilled specialist should attempt surgical interference, but the nasal tamponades may be used by a much greater number, and therefore should have a much wider field of usefulness.

In the *New York Medical Record* for September, 1890, Quinlan reported a death after an operation upon the middle turbinated body and ethmoid cells. I have had two deaths after removing the middle turbinated bodies, opening the ethmoid cells and sphenoid sinuses at

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the same operation. Ballenger has reported such disaster and others have done the same. These disasters are mentioned in order to illustrate the possible dangers attendant upon ethmoidal surgery and emphasize the need for some less radical measures. Such method I believe I have succeeded in elaborating after an experience in treating over two thousand cases by means of properly placed cotton tampons saturated in a solution of argyrol, forty grains to the ounce.

The cases in which I have obtained marked results are those affecting the optic nerves, retinal and choroidal diseases, affections involving the iris, conjunctival and corneal diseases, muscular errors and conditions of erratic refraction in which glasses are frequently changed, but without material benefit. This latter state is one of the chief indications that should lead to investigation of the nose and accessory sinuses, for diseases of those parts will so alter the refractive indices of the media that no correcting lenses will be long tolerated to the satisfaction of the patient. However, whatever correcting lenses have been primarily correct will be the ones accepted by a patient after a course of treatment by intra-nasal tampons, and I wish here to state that drainage of the accessory nasal sinuses by my method will so restore the normal refractive indices of the media that it becomes the part of wisdom to investigate the nose and sinuses in all cases of difficult refraction, and many such cases can be restored to comfort and a single pair of glasses in lieu of the half dozen pairs they will occasionally be using.

My method and theory were well described by Dr. Wm. S. Manning, who presented a paper before this society last year. Since that time I have continued my observations and satisfied myself still further as to the correctness of my original claims. In addition I have had radiographs made for the purpose of graphically depicting the actual location the tampons should occupy. These tampons are rendered visible by incorporating bismuth paste in the fibers of the cotton. From my plates I have selected two radiographs that serve, better than words, to emphasiz the essentials in the proper use of intra-nasal tampons.

The first picture that I wish to show you merely illustrates the correct path a probe must take in order to enter the sphenoid ostium, and this I term *the sphenoid direction.* The next picture illustrates what I term the *infundibulum direction.* An understanding of these two directions is essential to the proper placing of the tampon. The first is the primary direction employed and the second is the final step in the operation.

The first step can usually only be approximated because the middle turbinated body is generally too large to permit the placing of a tampon direct to the ostium of the sphenoid. The latter step can generally be accomplished, and I have found it the absolute *sine qua non* in the placing of the tampons in order to achieve full success.

The tampons are made from sterilized long fiber cotton wound about a long, thin wire-like applicator. This particular style of applicator and kind of cotton are essential in order that a long tampon may be properly placed by the gentle withdrawing of the applicator.

To make the tampon the necessary quantity of cotton should be flattened and stretched to the required thickness and length, then the probe should be taken in the right hand and the cotton held on the flat of the left hand. The applicator is then placed upon the middle of the cotton, which is then folded toward the body and over the wire and held in place with the thumb. The probe is then turned from left to right, or away from the body. The next procedure is to introduce the cotton tampon into the naris, giving it the sphenoid direction, pushing it as far back as possible between the middle turbinated body and septum. After the tampon is properly placed, the wire is slowly withdrawn by giving it a twist from right to left, and at the same time giving a slight upward shove to the tampon in order to engage and hold it as high in the nose as

possible. When the applicator has been sufficiently withdrawn, the handle is depressed until the wire is almost in contact with the upper lip and the tip pointing toward the infundibulum, then a final push is given in order to engage the tampon as nearly as possible in the vicinity of the infundibulum, after which the wire is finally withdrawn, leaving the tampon in its proper position. Before introducing the tampon, the nose should always be inspected in order to determine the width of the nares and the presence of any irregularities, for the tampon should be of such size as to reach from the anterior nares to the choanae posteriorly and of only such thickness as will permit a snug fit without undue discomfort.

The tampons should always be placed in both nostrils, for while one side may be more involved than the other, it is seldom that one side alone is affected, although symptoms may only be referred to but a single side.

It is necessary to leave the tampon in place for from ten minutes to an hour. The use of cocaine before placing the tampons is seldom required and should be avoided if possible, as best results are obtained without its preliminary use.

The technique to be followed after withdrawing the tampon is thoroughly flushing the nares and cleansing them of all secretions. The method may be either by post-nasal or intra-nasal douching by means of the ordinary post-nasal curved tip or Teets' anterior nasal tip. In lieu of that a douche obtained by means of compressed air is satisfactory.

After thoroughly cleansing the nasal chambers a bland oil may be employed, although in some cases the use of oil seems to prove too drying and militates against the usefulness of the tamponade treatment.

INDICATIONS.

My method of treatment by nasal tamponades is indicated in corneal diseases, conjunctivitis, iritis, diseases of the retina and choroid and affections of the optic nerve, erratic refractive states and some muscular anomalies of spasmodic nature; *also acute or chronic affections of the nose and sinuses.* In addition inflammations of acute and chronic nature affecting the Eustachian tubes, middle ears, pharynx and larynx are materially benefited by this method of treatment.

EFFECTS.

The results obtained through this treatment are immediate and remote, pleasant and disagreeable, and are also of subjective and objective kind. The immediate effects are suffusion of the conjunctivas, lachrymation, an increase of an already existing conjunctival con-

Illustration No. 1, showing the sphenoid direction, which is the primary position the cotton tampon should assume.

gestion, sneezing and flow of mucus from the nose. Intra-ocular and tympanic congestions are lessened and visual acuity may be rendered more acute. Tinnitus is frequently lessened or controlled for a time.

That actual drainage of the sinuses is accomplished is well demonstrated in occasional cases of acute nature in which the maxillary sinuses are sufficiently filled with hyper-secretion to overcome the light reflex incident to transillumination, *for subsequent to a treatment these sinuses will actually show a positive degree of illumination.* Of course, in chronic

cases which have progressed to actual empyema, no such effect is noted, for the reason that the mucous linings are too greatly thickened to permit transmission of light rays until after many treatments, or operation has been instituted.

Another most satisfactory immediate effect is the lessening of radiating pains which may have involved the ciliary nerves or various branches of the trigeminus. Headaches, which are described as frontal, vertical, occipital or of the entire cranium, are frequently promptly benefited after one or more treatments.

The disagreeable effects are occasionally most positive and may be noted as a decided turgescence of the erectile tissues of the nose, increase of pains, vertigo and nystagmus. I

Illustration No. 2, showing the infundibulum direction, being the position finally assumed by the cotton tampon before the probe is withdrawn.

have seen these last two symptoms of such severe nature that the patient would be unable to walk without aid, and indeed would fall if left unsupported. These aggravations are not greatly lessened by the use of cocaine, but must pass off gradually, and seem to yield most satisfactory to rest alone.

FREQUENCY OF TREATMENTS.

The frequency of treatments is governed entirely by the length of time the induced effects persist, and daily treatments may be necessary and again treatments should be but once a week or even less often.

CONTINUANCE OF TREATMENTS.

A single treatment is often sufficient for the cure of acute head colds, while for the more chronic conditions of the eyes or sinuses, the treatment may be necessary over a period of months or even for several years. The length of time that these treatments may be continued is but evidence of their virtue, for many heretofore progressive diseases of the eyes are rendered stationary while this method of treatment is continued.

Disease of the eyes or sinuses that are benefited but not cured through this treatment will often respond to operative interference, after which further use of argyrol tampons will establish a satisfactory result.

VALUE AS DIAGNOSTIC AID FOR INFECTION AND INDICATION FOR OPERATION.

The laboratory researches of Dr. Charles E. Terry, of Jacksonville, Fla., indicate the value of the argyrol tampon as an aid in diagnosing hidden infections of either acute or chronic nature, for in the presence of pathogenic organisms there is a distinct bleaching of the tampon which will change from its normal dark brown color to a yellowish tinge or even be fully decolorized. This fact is of importance in determining the advisability of operating upon the ethmoid region or sphenoid sinuses. In the event of progressive disease of the optic nerves or other ocular diseases, in which radiographs seem to indicate normal sinuses, and though the pictures show clear, large sinuses, there may yet be sufficient residual infection to influence the progress of ocular diseases; the membranes being infected to the point of saturation, with resulting ostitis of proximate parts. This condition I have observed in a sufficient number of cases to lead me to state it as a possible cause for some otherwise inexplicable ocular diseases of progressive nature, and in lieu of "idiopathic

cause," such origin should be considered in the presence of positive bleaching of the tampons. Furthermore, a positive reaction obtained in progressive diseases should suggest the advisability of operation, providing some improvement is observed through the use of tampons employed as a therapeutic measure, and this despite the negative result of the radiographs.

THEORY AS TO ACTION.

The theory advanced as to the benefits from this method I have stated in a former paper as follows:

"The theory which the writer has evolved and which seems to be proved through results obtained in practice is as follows: The nasal accessory sinuses at some time or other have become infected with some pus-producing organism. The germs may remain dormant after the case is apparently cured, without occasioning any particular symptoms. Subsequently the patient becomes weakened through some systemic disease or the eyes overstrained through excessive use or the wearing of incorrect lenses; the eyes then become the point of least resistance. Some exciting agent may occasion excessive flow of mucus within the accessory sinuses thereby completing the needs of the laboratory; namely, equable temperature, moisture and proper media for the development of germs, and through the germs' development **toxins are produced which enter the circulation through the lymphatics or the blood currents and in such a way occasion metastatic inflammations. In some instances it is the toxins and in others actual infection through the germs themselves.** In the one instance there is inflammation with plastic exudate, in the other actual abscess formation. In the one condition we may have plastic iritis, in the other corneal abscess. Again, we may have simple irritation of the nasal nerve as it passes through the ethmoid regions, and this through the relation to the lenticular ganglion and the long ciliary nerves and infratrochlear nerve may occasion the erratic muscular troubles which already have been noted. Usually there is a spasmodic blurring of the eyes at some time. These conditions are frequently put down as ciliary spasms, but in truth they are nerve disturbances of toxic origin. Their cure may readily be obtained by employing the methods herein described by the author.

"A theory which has seemed to prove practicable is that diseases of the eyes which have been dependent upon complicating states of the nose or the accessory sinuses are more amenable to treatment when staphylococcus infection alone is present. Cases in which mixed infection is evident are amenable to improvement and sometimes cure, but are more prone to relapse. Those cases in which pure streptococcus infection is present are most grave and are only amenable to operative methods and are likewise apt to prove progressive with ultimate serious result upon the vision; in some cases actual blindness is the final outcome.

"Furthermore, organic changes may ensue as the result of any of these infections. Reabsorption of exudate is observed in the simple staphylococcus infection; partial absorption in mixed infection but in pure streptococcus infection there is definite destruction of tissues. In these latter cases the disease may be stayed in its progress, but positive cure is rarely possible. Thus far I have never encountered pneumococcus, but in the light of its known virulency I believe metastatic diseases of the eye which might arise from such infection would prove to be very malignant and probably impossible to cure."

In addition to the above, I am very pleased to emphasize the part the lymphatics merit for the benefits upon the eyes and other proximate parts observed after placing a tampon saturated in argyrol within the nose. Through personal letter to me and published correspondence in the October number of the SOUTHERN MEDICAL JOURNAL, Dr. I. L. Van Zandt, of Fort Worth, Tex., has well expressed the idea as follows: "I would suggest that the argyrol is taken up by absorption from the nasal passages, and is carried by the lympathics to the diseased eye, and there does its work."

AUXILIARY TO OTHER TREATMENTS.

My deductions have resulted primarily from cases treated without other aid except in cases requiring mydriatics or myotics and in these instances the use of argyrol tampons enhances the effects of such preparations.

The following reports taken from cases will serve to illustrate and emphasize some of the virtues claimed for this method of treatment.

CASES WITH PRIMARY AGGRAVATION AND ULTIMATE BENEFITS.

Mrs. A. M. P., age 62. During spring of 1913 suffered severe attack of grip, from which there was a gradual partial recovery. Glasses that had

been comfortable were no longer pleasing, as everything near or distant seemed to be blurred. For distance she was using O.U.+1.25 Dsph, and for near purposes O.U.+4.50 Dsph.

V—O.D. 20/200+2.50 Dsph=20/15.
O.S. 20/200+2.50 Dsph=20/15.

and with O.U. 5. Dsph Jaeger No. 2, could be read at 10 to 12 inches. The ophthalmoscope showed a diffuse haze of vitreous in both eyes and the retinae were clouded, but otherwise the intraocular parts were negative.

Transillumination—All sinuses negative except ethmoid cells which showed dark. The intranasal parts were somewhat irregular because of septal spurs and the erectile tissues turgescent with a thin watery discharge from the regions of the infundibula. Other symptoms complained of were tinnitus, painful cough, sneezing, severe pain in vertex and occiput with stiffness of the neck.

This was a case of pan-sinusitis with a mild type of serous retinitis and Eustachitis. **Primary treatments with argyrol tampons occasioned three days' aggravation in which all pains were more severe, stiffness increased in the neck and vision more blurred.** After three days there was a gradual subsidence of symptoms and general improvement. At the next treatment the same aggravations were observed, but continued for a less time and were less severe. In addition to the argyrol treatment an iron tonic was prescribed. After five treatments over a period of six weeks this case was discharged and the original glasses were continued because no others were as satisfactory.

Mrs. M. E. S., age 29. Consultation for relief of moist blepharitis marginalis, which had resisted the usual methods over a period of seven years. Vision was normal. O.U. 20/20 and no intra-ocular condition was evident. Transillumination showed all sinuses clear except the ethmoids. The intranasal parts were negative except for turgid middle turbinated bodies.

Primary treatments induced all the symptoms of a severe head cold, which passed off after a few days, but were repeated after the first two treatments. Mercurial ointment had been in use for years and was not discontinued, as it served to afford relief in the mornings after night's sleep. Five treatments over a period of two months served to effect a cure.

Chronic Headache.

Mrs. I. F. D., age 32, and Mrs. G. A. H., age 43. Both suffered from childhood with headache unrelieved by glasses or general treatment. The former patient was treated at intervals from February 15, 1913, until July 9, 1913, with resultant cure. The latter patient has had two treatments and obtained the first benefit she has ever experienced, having gone for several successive days without headache.

Rhinitis Habit.

Many cases state that they catch cold upon the slightest provocation irrespective of season. At such times eyes are always affected and glasses of little use. Mrs. E. A., age 31; Miss Mae D., age 42, and Mrs. G., age 62, are cases in point and illustrate the benefits to be derived from my method of treatment irrespective of age. In these three cases glasses were frequently changed, for the refractive states seemed to be variable. Treatment has lessened the tendency of head colds and the refractive states have become constant so that changes are no longer necessary and will not be except as the requirements of age necessitate.

Recurrent Iritis.

One case will suffice, as it was of intense nature and a most unfavorable prognosis had been rendered. Mrs. H. A., age 34. First consultation July 5, 1912. History of repeated attacks of iritis. Vision at that time was O.D. 20/30, O.S. 20/15. Severe iritis was present in right eye and left eye negative. Sinuses all clouded by transillumination. Spots before eyes quite constant. Severe attack of irido-cyclitis ensued in both eyes and progressed to state of blindness except for large objects and light sense. Mydriatics and argyrol tampons resulted in successful issue, and at recent consultation V O.D. 20/10, O.S. 20/10, and no subjective discomfort is present. Without mydriatic no glasses are tolerated and patient uses eyes without any sense of discomfort.

Optic Neuritis Tending to Optic Nerve Atrophy.

Four cases will serve to illustrate the diagnostic value of argyrol tampons in establishing the presence of infection within the nose and adjacent sinuses.

Miss Agnes M., age 19. Consultation April 26, 1912. History, rapid loss of near vision preceded by many attacks simulating hysterical blindness. Vision on day of first consultation, O.D. 20/200, O.S. 20/200, which was momentary, being replaced by positive blindness from moment to moment. The vitreous chambers were clouded, but the optic disks could be studied and were ischaemic. The visual acuity was improved by plus cylinders axis 90 giving 20/70 for each eye, but this, like the uncorrected vision, was momentarily replaced by blindness. Radiographs were indeterminate. Tests for infection by means of argyrol tampons were positive; that is, the tampons were bleached. Operation was advised and instituted, the middle turbinated bodies being removed, ethmoid cells

opened and sphenoid sinuses trephined. The interiors of sphenoid sinuses were found necrotic. Vision rapidly improved, and at consultation on October 16, 1913, V—O.D. 20/15, O.S. 20/15. Examination with the ophthalmoscope, both eyes negative except for mass of opaque nerve fibers in right eye. The case is now cured and requires no lenses to improve vision, although weak compound hyperopic cylinders are accepted.

Mr. H. S. B., age 37, gave a history of frequent blindness since age of 15, becoming of daily occurrence just previous to consultation on January 17, 1913. Vision then equalled O.D. 20/70, O.S. 20/70. Radiographs showed clouding of maxillary sinuses, ethmoid cells and sphenoid cells Test for infection by argyrol tampons positive. Operation similar to first case resulted in restoration of normal vision and subsidence of symptoms. Sphenoid sinus walls were necrotic.

O.D. 20/15+.25 Dcyl axis 90=20/15. On June 27, 1913, vision=O.S. 20/30+.75 Dcyl axis 90= 20/15. No abnormal signs were then present nor have since presented.

Mr. M. H., age 57. First consultation May 10, 1913 History, sixteen months previous noticed a rapid loss of vision in right eye, which at end of few months was total except for peripheral fields, and this despite the usual treatments on the supposition that the case was specific. The ophthalmoscope showed pronounced paleness of optic nerve in right eye and decided neuro-retinitis in left eye. Vision of O.D. was light sense only and of O.S. 20/30 much clouded. He had been told he was suffering from optic nerve atrophy.

Tests by argyrol tampons revealed infection and operation was advised without waiting for radiographs. The usual operation was performed and sphenoids found necrotic. On November 15 the vision of O.D. was 20/50 and O.S. 20/20.

A case that may well be included under this head was treated by my assistant, Dr. A. C. Worth. The result was brilliant, and the history as follows:

Mr. J. J. D., age 27. In April, 1912, suffered from railroad accident, being thrown from a train and sustaining head injuries which necessitated a stay of twenty-two days in a hospital at Rochester, Ohio. Shortly after regaining consciousness he noticed vision of left eye was impaired. This rapidly grew worse until at time of consultation, on November 18, 1912, the vision of O.S. was 5—Nasal Tampon Treatment of Sinus Diseases 20/100. That of the O.D. was normal. The findings of the ophthalmoscope seemed to warrant a diagnosis of optic nerve atrophy. The optic disk was very pale and the vessels all much contracted. Except for the occasional use of cathartics, the only treatment employed was that of intra-nasal tamponades saturated in argyrol (40 grains to the ounce). At first daily treatments, and later less frequently. On January 3, 1913, central vision had improved to the degree of 20/30, although the visual field is contracted and a number of scotomata are present.

In all these cases treatments by argyrol tampons was continued after operation and in all the sphenoid sinuses assumed a healthy state. Anti-syphilitic treatment was purposely avoided. No specific history was elicited and no tests made, the patient's statements being accepted as sufficient to warrant treatment along the lines indicated.

In closing, I wish to reiterate that this method of treatment is valuable in many diseases of the eyes either alone or as an adjuvant to other treatment.

Also that as a diagnostic aid in determining hidden infection it is unequalled and *a positive reaction even in the face of negative radiographs is sufficient to warrant operation in certain types of progressive diseases affecting the deeper ocular tissues.*

Finally, I wish to emphasize my belief that no negative report upon the state of the nose or condition of the sinuses should be made until a test has been instituted by means of intranasal argyrol tamponades, for their use will frequently reveal hidden infections that would otherwise escape the observer's attention and the presence of which may be an active agent in causing not only optic nerve affections, but metastatic inflammations of the entire uveal tract.

116 *Washington Avenue, Albany, N. Y.*

DISCUSSION.

Wm. S. Manning, Jacksonville, Fla.—This treatment of Dr. Dowling I have used for five years on at least a thousand cases. I know of no other method of office procedure for general nasal troubles that gives such good results. When the ordinary methods of transillumination do not show anything, in cases of that sort you can certainly get results with the nasal tampon. Dr. C. E. Terry, of Jacksonville, made the contribution of the bleaching of the argyrol tampon.

I have had patients come to me with these headaches to be almost uniformly relieved with the tampon, and it is only naturally popular with the

patients. I have gotten good results in conjunctivitis. The depletion seems to very much aid in the clearing up of conjunctivitis and as an aid to eserine in glaucoma. Some of the cases were probably due to toxemia. I never use cocaine in the nose in any cases. I find when I use cocaine previous to putting in the tampon I get almost no result, because a large part of the efficacy of the tampon is because of the irritation of the cotton, setting up a drainage. If the patient sneezes, you get much more relief.

Dr. Bledsoe—Do you find many patients object seriously to the tampon?

No.

J. Ivimey Dowling, Albany, N. Y.—In regard to the use of the plain cotton tampon inducing sneezing. The sneezing is not an irritation due to the cotton alone, but is the result of the irritating effect of the induced capillary drainage. This may be readily proved by using the two methods upon the same person, for you can put a plain tampon of cotton and not induce sneezing, but the argyrol tampon will.

Since I have used this method of treatment I have used Bowman's lachrymal probes less than formerly for epiphora results because of obstruction to the lachrymal canals in the lower third as well as the upper two-thirds of the canals. **The obstructions in the lower third of the canals usually result from a soft stenosis or turgescense that is readily overcome by argyrol tampons.** Strictures in other parts of the canals are best overcome by use of negative galvanism applied through the use of properly selected Bowman's probes.

As to the length of time the tampon should be left in situ for the purpose of diagnosis, it depends upon the circumstances in the case. In active infections the tampon will bleach almost instantly, but in the more chronic conditions ten, fifteen or twenty minutes may be required before positive bleaching will be observed.

A Member—Is the pain very severe?

Dr. J. Ivimey Dowling—Only in those cases cited. The patient I had in mind when I spoke of vertigo following the removal of the tampon is a doctor with a very large practice. Two or three days following this treatment she began to get relief, relief such as she had never had before, and now she is practically cured.

A Member—From depletion or antiseptics?

Dr. J. Ivimey Dowling—Dr. Van Zendt has suggested that the benefits resulting from argyrol tampons are due to its absorption by the lymphatics, and this is likely true, so that I am willing to concede the virtue of argyrol as an antiseptic, but also wish to emphasize its special virtue because of the depletion induced by the affinity of this colloidal preparation with the colloidal products of disease and also because the specific gravity of the solution I advise approximates the specific gravity of the nasal discharges.

A Member—How long do you allow the tampon to remain in the treatment of an acute cold?

Dr. J. Ivimey Dowling—That depends on the patient. In highly nervous patients I allow them to remain ten to fifteen minutes; with a phlegmatic patient it may remain half an hour.

A Member—Never used glycerine?

Dr. J. Ivimey Dowling—I never used glycerine, for I long since tried it in combination with argyrol solutions and failed to find it an added benefit.

SOME OBSERVATIONS ON PELLAGRA.*

By J. E. Evans, M.D.,
Fulton, Ala.

In addition to a systematic study of malaria, its cause and prevention, we extended our microscopic and bacteriological investigations to clinical and cultural observations of several diseases of known and unknown cause, among which were: Pyogenic infections, pneumococcal disease, various types of diseases and manifestations caused by the common group of colon bacteria, including Shiga's bacillus, syphilis and pellagra. For the last two years I have observed that the homes of all pellagrins coming under my observation were infected with cockroaches.

Early last spring I collected many specimens of these insects from various sources and studied them very closely. They were of the common household genus, blatta orientalis infesting Southern homes, especially along the seacoast. These insects are said to have been imported into this country from India through the Levant. These insects are household pests of omnivorous and nocturnal habits. Their presence in the homes of pellagrins and the peculiar, offensive odor produced by them in pantries and on provisions over which they feasted, led me to investigate their causal relations to pellagra. I incubated them, dissected and examined cultural growths from their intestinal tracts, but was never able, even by feeding and injecting cultural growths into animals, to convict them of causing the disease in question. However, I did find them to be natural incubators and carriers of teeming millions of bacteria of the colon group. I studied and experimented with various corn products and molds common

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thereto, but without discovering anything new concerning the subject. After this we turned our attention to a close study of the secretions and blood of the limited number of pellagrins at our command. Of late years I have leaned towards the infectious causal theory of the disease, believing that its seasonal recurrences were prima facie evidence of its insect-borne nature.

I therefore based my researches on the theory that the disease is a true infection. I made various and sundry cultures from the blood and secretions of several patients in my charge. The blood cultures were made from material taken from carefully exposed subepithelial capillaries of the dorsal surface of the hands in areas showing the characteristic pellagrous blush. From one patient's blood thus obtained I cultivated by stab puncture of saccharosed gelatin-starch culture media, strange coccal-like bodies of about .75 to 1. micron in diameter and of pale pinkish hue in unstained thin smears. These bodies were not clumped or in chains, but were uniformly distributed in the smear. They rapidly faded from view within ten minutes after preparation, and were not found in smears from the surface of the culture, but only from the semiliquified culture media underneath the surface. I was never able to stain these bodies and hence came to the conclusion that they were not cocci from the skin, and from their uniformity in appearance and structure, I feel reasonably sure they were not decomposition blood products. Then, what were they? Are they related in any way to the minute bodies described by Sambon and Chalmers[1] in 1911? Taylor[2] in his "Sambon, the Man," says of the investigations of Sambon and Chalmers: "Not the least interesting observation made by these men was the finding of a protozoal organism in the brain and spinal cord of a young Roumanian pellagrin who died in the acute stage of the disease. . . . This new organism was pronounced to be protozoal by Manson, Leishman, Machin and Low. . . . Other minute organisms or bodies, possibly related to this parasite, were found in the blood, in the cerebro-spinal fluid and in the liquid from skin lesions of other pellagrins by Sambon and Chalmers. . . . Dr. Balfour described an endoglobular parasite from the blood of Soudanese fowls in 1907 which according to Dr. Sambon were the coiled-up, endoglobular, larval state of spirocheta." If the foregoing organisms discovered by these men at various times are in any way related to the cause of pellagra, then we may assume that the organisms found by me in blood cultural growths from pellagrins may also have been endoglobular, larval stages of a protozoal spirochete, having a direct causal relationship to pellagra. As a further confirmation of this theory of the cause of pellagra, we were able to find a hitherto undescribed spirochete in the buccal secretions and alimentary excretions of pellagrins. These spirocheta are very short and slender organisms of about three spiral turns upon an average, and are sharp at both ends. They stain very poorly and with considerable difficulty in methylene-eosin-azure, only, in contradistinction to the common spirocheta buccalis which stains easily with the common aniline dyes. They hold the stain very poorly also, and like the bodies found in the cultures, fade from view in a short time. They stained with even greater difficulty than do spirocheta pallida Dr. Adams and myself have been able, by the finding of these spirocheta, to make a tentative diagnosis of pellagra in cases otherwise obscure, but which later developed the characteristic signs and symptoms of pellagra. I have observed as many as a dozen organisms in a single oil immersion field in fresh stained smears.

From these limited observations I have come to a tentative conclusion that pellagra is an infectious spirochetosis, closely allied to syphilis but in all probability of very much longer period of incubation, extending perhaps, over many months. According to Bass, the Wassermann reaction is also alike posi-

tive in both syphilis and pellagra, and experience has taught us that, like syphilis, pellagra yields more readily to the arsenical preparations than other methods of therapy. While these observations are few and very incomplete, we hope that they may be an incentive to further and more elaborate and conclusive studies along this line of research.

REPORT OF AN INTERESTING CASE OF DIABETES MELLITUS SHOWING HOOKWORM INFECTION.

By Wm. W. Dinsmore, B. Sc., M. D., and
P. B. Moss, A. B., M. D.
State Board of Health, Montgomery, Ala.

D. F., male, age 16 years, next to youngest of five children of widow living in cotton mill village, East Tallahassee, Ala. History not clear, owing to the fact that patient is mentally incapable of giving a definite history and the mother was unable to furnish satisfactorily any connected story of the family history or the personal history of the patient.

Patient was first seen on December 2, 1913, at his home, in consultation with Dr. Jesse Gulledge. His chief complaint was weakness and diarrhoea.

Family History—As far as can be determined, family history is unimportant. All members of family living and well, except father, who died fourteen years ago of pneumonia.

Personal History—Up to age of ten—six years ago—patient seemed a perfectly normal child. Had measles at seven, whooping-cough at eight. No history of any other illness of any kind.

Present Illness—Impossible to get any definite history of onset of present condition, but mother thinks it dates back about six years, when her attention was first attracted by his ravenous appetite. According to her statement, this abnormal appetite has continued a prominent feature of his case. Patient eats almost continuously throughout the day, great quantities of all kinds of food—butter, fat meat, bread, cakes, fruits—in fact, he was seldom seen without something to eat in his hand. For three years he has had a continuous diarrhea, passing from six to ten stools during the day, and two to four during the night. A year ago he began having involuntary action from the bowels. The stools are soft, semi-liquid and very offensive, but of normal color. Mother states the patient began to lose weight five or six years ago, and she thinks his present emaciated condition has existed at least four or five years. Patient is practically helpless; while not confined to the bed, he spends his time sitting around in a languid manner, or when standing, almost invariably leans in order to support himself. When he attempts to lie down or arise, he does so slowly and with great difficulty. Tires very quickly, even on slight exertion. Sleeps poorly. No history of any cough or expectoration. **No thirst and no polyuria.** For six years patient has used tobacco

incessantly, chewing a ten-cent plug and dipping about a dime box of snuff a week. His history is otherwise negative.

Physical Examination—On examination of the patient, the striking feature is the remarkable degree of emaciation and the senile expression in his face. His weight is 47 1-2 pounds. A low degree of mentality is apparent in his facial expression and his conversation. Skin is cold, harsh, and dry. There is almost a complete absence of subcutaneous and muscle tissue. Hair is dry. Breath has a sweetish odor. Abdomen distended. Superficial veins of belly are greatly engorged and stand out prominently. Abdomen presents typical picture of "pot belly." There are scars on his legs below the knee, probably the result of repeated attacks of "ground itch." Radial arteries soft. Pulse of low tension, ranging from 95 to 110 per minute. No irregularity in force or rhythm. Temperature subnormal, ranging from 94.5 degrees to 97. Examination of chest shows slight retraction at apex on left side. Percussion note over upper portion of left lung, front and back, is quite dull, particularly in the axilla. There is distinct tubular breathing over left lung, particularly over the front at the second and third interspaces, and in the axilla. No rales can be definitely made out. Right lung seems clear. Heart sounds clear but accelerated. Cardiac dullness, normal. Liver dullness markedly diminished; as there is no evidence of displacement of liver, the diminished liver dullness is likely due to atrophy of liver. Spleen and kidneys not palpable. Belly is quite soft, and there is no abdominal tenderness.

Urine—Twelve to twenty ounces in 24 hours. Clear, light amber color; specific gravity, 1,045; no albumen or casts; urine readily reduces Fehling's solution; repeated fermentation tests show 8 to 10 per cent sugar.

Feces—Hookworm ova found in abundance without use of centrifuge. No other parasites found.

Blood—Red cells, 4,500,000; white cells, 5,200; haemoglobin, 80 per cent; serum shows milk-like cloudiness, due possibly to free fat in circulating blood; no evidence of acidosis; Wassermann, negative.

Sputum—No specimen available for satisfactory examination.

Diagnosis—diabetes mellitus; uncinariasis; complicating pulmonary tuberculosis, strongly indicated by well marked physical signs.

Treatment—Patient was under observation only ten days, refusing to remain longer in the hospital. There was no opportunity, therefore, to carry out any treatment for the diabetic condition other than general hygienic measures. Specific treatment was given for uncinariasis, two courses of thymol of 30 grains each being given at an interval of three days. A small number of

parasites were recovered from the stool after each treatment.

It was quite obvious from the beginning that the condition presented in this case was due to the disease diabetes, and that his hook-

worm infection was of secondary importance. No great improvement, therefore, could have been expected from a specific treatment for uncinariasis. Subsequent reports have sus-

tained this view. Two months after the patient had left the hospital a letter from his mother indicated that there was no change in his condition.

THE EFFECTS OF THE CONTINUED USE OF OPIATES ON THE HUMAN SYSTEM.*

By W. C. Ashworth, M. D.,
Greensboro, N. C.

It would be well for me to say in the beginning that by the use of the word "opiates" I mean any of the various forms of the drugs that are made from the juice of the poppy (the Papaver Somniferum), as gum opium and laundanum and paregoric; the numerous alkaloids, as morphine, codeine, etc., and the derivatives from the alkaloids, as dionin and heroin. (Can I stop here to enter a protest against the use of these drugs—dionin and heroin—in such chronic diseases as asthma, bronchitis, etc.? Heroin especially has been said by many good authorities to be a non-habit forming drug. This is not true, if given in any chronic disease for a period of six weeks or more it produces a habit just as bad, if not worse, in its effects than that produced by morphine.) I want to include, too, all the various methods of taking these drugs: the smoking of opium in the pipe and chewing gum opium; the taking of laudanum by the mouth, and the use of the various alkaloids in the hypodermic syringe. The use of the syringe has added enormously to the number of opiophagists. The first alkaloid (morphine) was separated from opium about 1817 by a German chemist (Serturner), but it was not used in the hypodermic needle until 1839 (in New York by Drs. Taylor and Washington) and did not come into general use until about 1870. I believe Tieman made his first hypodermic syringe in 1856. This was copied from one brought from Edinburg by Dr. Fordyce Barker. Of the opium-eaters I have known (about 200 or 300) at least 95 per cent were using morphine with the hypodermic needle. The others were continuing to use it in the

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way they were first taught; for instance, I knew a woman who learned to use laudanum because it was given her in the form of an enema to control a chronic dysentery. She remained an "opium-eater" for more than twenty years and never took it in any other form save laudanum in enemata. If the increase of taking it is gradual enough I do not suppose that there is any limit to the amount of opium, laudanum or morphine that an opium-eater might take in twenty-four hours without doing himself a serious injury. I have known a woman who took 120 grains of morphine by mouth every twenty-four hours. She had kept this up for several years. I knew two doctors (father and son) who each took hypodermically 100 grains of morphine and the same amount of cocaine every day. They sat by each other all day, giving each other hypodermics. They hardly had time for anything else. They both took treatment and made good recoveries. It is generally held that there is a physiological limit in every one as to the amount of morphine that the system will take up and utilize —the rest of the morphine is eliminated by the bowels, liver, kidneys and in various other ways. Dr. Jennings, of Paris, places this limit at twelve centigrams—or a little less than two grains per day. I think Jennings is very reliable in anything he has written about the disease of opium-eating and its treatment, but I believe he places this limit entirely too low. It differs very much in different patients. With the average patient I would place it at thirty centigrams per day—I do this because with patients taking any amount (twenty to forty grains of morphine per day), with free elimination through the bowels you can reduce them in three or four days to thirty centigrams with scarcely any suffering.

In a study of the effect of the continued use of opiates on the human system we had best take it from three different standpoints: (1) its physical effects, on the body; (2) its mental effects, on the mind; (3) its moral effects, on the soul. Of course, our effort is to understand the chronic effects of opiates, but I am certain that we will understand these better if we glance briefly over the physiological action of a single dose, and also consider the symptoms produced by a lethal dose. We are told by one of the materia medicas that "opium is a stimulant, narcotic, anodyne, antispasmodic and intoxicant." When given by the mouth it has much more effect in checking all of the secretions of the intestinal tract than when given hypodermically. It also checks the peristaltic movements of the bowels; it acts by stimulating the inhibitory nerves of the intestines—if given in excessive doses it *may* paralyze these nerves. This is why occasionally constipation is followed by exaggerated peristalsis and free evacuation of the bowels. Without exception, from the mouth to the anus, it checks all secretions and excretions. Of the numerous alkaloids, morphine is the only one that has this decided effect on the bowels. Papaverine comes next; narcotine is much feebler; narceine and codeine have almost no effect, while thebaine excites violent intestinal contractions.

Morphine is eliminated by the saliva, through the stomach, by the bowels, the skin, and kidneys. It is eliminated slowly. After one dose morphine may be found in the urine for several days, so that the drug is acumulative in its action. (There is so much morphine in opium—from 12 to 14 per cent—that observations recorded of one apply to the other.) In confirmation of the accumulative action of opium, I have observed in withdrawing it from the habitue that the acme of suffering comes on just about forty-eight hours after the last dose is given.

ON THE BRAIN AND NERVOUS SYSTEM.

In order to produce its characteristic effects, opium must be absorbed into the blood and carried to the motor, sensory and higher nervous centres, and to the terminal end-organs of nerves. Having been carried to the brain and cord, the functions of the ganglion-cells are at first stimulated, and, secondarily, depressed or inhibited, probably owing to the

salts diffusing through the cell wall and entering temporarily into combination with the protoplasm. The single dose of opium relieves pain in almost every one, but its other effects differ decidedly in different people. Some are mentally and physically depressed, with decided nausea, and otherwise disordered stomach, and headache and constipated bowels; but in the majority there is exhiliration and increased cerebration, with a sense of quiet, calm, happiness and indisposition to sleep until the effect passes away. Itching of the skin (*pruitus opii*), especially of the nose, is a very common symptom of the single dose or of many doses. After a dose of any size the pupils are contracted and do not respond to light. Infants and children are supremely susceptible to the influence of opiates, and an overdose is far more apt to produce convulsions than in the adult.

Probably there is no drug in the pharmacopoeia in regard to which so many idiosyncrasies are displayed by patients. Instead of quieting, it may in some increase nervousness and restlessness. I have seen one patient in whom a dose of opium or morphine would invariably produce violent colic. In rare cases (more apt to occur in women) a small dose may produce dangerous symptoms of collapse. In experimenting on cats a dose of morphine or opium always produces convulsions. This effect is very rare in an adult human being.

The fatal dose of opium (varying much in different people) is put by Pearce at from three to ten grains of the powder, and at one grain of morphine. Shoemaker, in his "Materia Medica," tells of one-half ounce of laudanum given in an enema killing a patient who was suffering with typhoid fever. In the child one drop of laudanum has brought on dangerous narcosis, two drops have proven fatal through coma and convulsions. The onset of the symptoms from a poisonous dose is rather slow; dangerous symptoms may be two or three hours developing after the ingestion of the drug. The desire to sleep is beyond the patient's control; both the circulation and respiration are slowest; the heart beats forty or fifty times to the minute; the respiration falls ten or twelve to the minute, and as death approaches becomes much slower; the face is pale, the lips are blue, the skin is cold and clammy; the pupils are contracted to a pin point and do not respond to light. The patient becomes comatose; the breathing is generally stertorous; all secretions are checked, save a cold clammy perspiration. With a gradual increase in all of these symptoms, death occurs in six or seven hours from exhaustion. Whittaker states that three-fourths of the deaths from opium occur under five years of age. Most cases of poisoning in adults occur in opiophagists who recommence the habit with too large a dose.

In considering the effect of the habit of opium-eating on the body of the habitue, it is very difficult to make any general statement because these effects vary so much with different inviduals. If I make any general statements you must know that I recognize the fact that there will be many exceptions. In the East, where the habit has become almost a national disease, it seems to have a less deleterious effect on its habitues than it does on those of the Caucasian race. It is an undoubted fact that a good many people take some form of opium for years without its having any bad effect on them; without their nearest acquaintances finding it out. The husband may take it a good many years without the wife finding it out, and vice versa. My remarks and observations in this paper will be founded on a study of between two and three hundred habitues that I have known. With the exception of the effect on the teeth, I do not believe that there is any organ or portion of the human body upon which opium has a permanent effect; that is, I believe that within six months after the drug is stopped all the symptoms will have disappeared. But, it matters not what form of opium is taken, it seems to hasten the destruction of the teeth; and with every treatment taken for the reduction of opium, the habitue is, from violent pain

therein, almost sure to lose one or two teeth. From the close relationship between the hair, finger nails, skin and teeth, it is possible that the continued use of the opiates may have some permanent effect on the other three as well as the teeth. Opium may have some effect in producing permanent baldness; there is so much baldness, even in the young, these days that I will have to make further observations before I can say. The finger nails, I know, are brittle and grow with unnatural slowness. When the opium is stopped they grow very rapidly again. Authorities differ as to the effect on the skin. Some say that under its influence the skin is hard and dry; others that it is cold and clammy with sweat. We doubtless have both—but very often it is healthy.

I will draw the classical picture as given by such men as Osler in his "Practice," and Shoemaker in his "Materia Medica." All other writers on these two subjects seem with them to have followed the old writers with very little study of the subject themselves. If this picture is ever true there are many and numerous exceptions to every statement made therein "The opiophagist is an inveterate and habitual liar; no reliance whatever is to be placed on his statements; his moral nature is so destroyed that he may be classed as an *amoral*. There is a sallowness of the complexion that is almost pathognomonic; he becomes emaciated, gray and prematurely aged. There is anorexia and great disturbance of the digestion; he is at times restless, irritable and unable to remain quiet. The *pruritus opii* is a common symptom. Sleep is disturbed and save when under the influence of the drug the mind is depressed. At other times there is mental hebetude and vacillation; the habitue has no ambition; he is indecisive; sits and dreams in a "dopy" condition for hours; there is impotence in the man and cessation of the menses, with sterility in the woman. If the drug is taken away from him, he will lie, steal, do anything to get it, but being without it for eight or ten hours withdrawal symptoms come on. We have yawning and sneezing and then lassitude, mental depression, slight nausea and epigastric distress, with diarrhoea. If the drug is still longer withheld, there is profuse perspiration, with violent vomiting and diarrhoea; horrible mental distress with complete collapse and death from exhaustion. As time rolls on, the dose has to be constantly increased, until finally the system refuses to absorb the drug, and death occurs from general debility, combined with intense suffering." This is the classical picture given by almost every text-book. It is only partially true. They seem to have combined the worst symptoms of each individual and written as if they all had occurred with but one habitue. To get at the truth I can only take the various parts of the body separately and tell of the effects of the chronic use of opiates on them and the many times they fail to have such an effect. Pin-point contraction of the pupils is the most constant symptom I know. I have not known a single exception. This minute contraction always interferes with sight, especially at night. When a normal person goes out at night the pupils dilate largely; this, by letting in more light, enables him to see much better, but the opium-eater's pupil does not respond to light, or its absence, so that even a bright starry night appears very dark to him.

In the habitue, all secretions and excretions, save the perspiration, are more or less checked. (There are not many exceptions to this, that is, all habitues do not have all secretions and excretions checked, but all of them have some of them interfered with.) Therefore, the majority of them suffer with various forms of indigestion. The normal hydrochloric acid of the stomach is formed in excess; the flow of bile from the liver is subnormal in amount: the natural secretions of the bowels are so checked as to create a severe constipation (this is added to very much by the checking of the natural peristaltic movement of the intestines). This continuous constipation produces a very severe form of piles.

From this interference with the proper di-

gestion of food we have a thinning of the blood, which produces a general appearance of anaemia. The whites of the eyes take on a bluish, yellowish discoloration; the skin shows an unhealthy whiteness, slightly tinged with yellow, and the victim is apt to lose weight. But there are many habitues who, after fifteen or twenty years' use of the drug, exhibit very few of the symptoms of indigestion; they are full-blooded and plethoric, with a natural, healthy color in their faces and, undoubtedly, they are good, healthy trenchermen.

In many habitues, not all, probable not over half, there is disturbed sleep, and in those in whom this occurs, it is caused by their taking too large a dose too late at night. They will be waked many times each night by disturbing dreams. They will wake with a start to stay awake only a few minutes, go to sleep and repeat the performance many times during the night. This does not occur in those who have learned to avoid the large doses too late at night.

The constant use of opium diminishes the flow of urine—there is "urinary stammering," that is, the user frequently has a difficulty of starting the flow; after the start, it is voided without further trouble. Some authorities state that opium increases the excretion of urea. In each ounce of urine passed there is a much larger per cent of urea than normal. I have frequently found the specific gravity of the habitue's urine to be as high as 1035 deg. to 1040 deg., without a trace of sugar. But on account of the diminished flow of urine, I rather suspect that the amount of urea passed in the twenty-four hours, too, is less than normal. Whittaker states that the habitual use of opium frequently causes albuminuria. This has not been my experience.

In regard to "impotence in the males with cessation of menses and sterility in the females," my experience leads me to qualify these statements a great deal. I have known many males who, after fifteen and twenty years' use of the drug, had not lost their sexual desire or power. I have known women to bear children after ten and twelve years' use of the drug. (I must here call attention to Dr. Petty's statement about these children: they are opium-users when they are born, and if the proper amount of morphine is not given them, they will surely die in a day or two.) I have known a doctor and his wife, both users of the drug, who were parents of five children, every one of whom died in a few days after birth. Certainly the constant use of opium diminishes the sexual desire in the majority of people, and, as old age comes on, stops it entirely, sooner that it would be stopped by old age alone.

In withdrawing the drug by the gradual method, even while the withdrawal is going on, some of the habitues—both men and women—go almost insane from the intensity of the passion that develops at this time.

Opium is one of the most steady and powerful heart stimulants in the materia medica. In my opinion this is the chief cause of the effect of opium on the brain. The heart bathes the brain cells in bright arterial blood; there is a rapid and continuous flow of ideas, all physical pains, all mental troubles are forgotten; there is quiet and peace and happiness such as the victim has never experienced before. To the habitue, beginning his habit, this first delightful effect of the opiates may last for months or even for several years. (This varies greatly in different people. I think it depends chiefly upon the rapidity with which the dose is increased. The slower the size of the dose is increased the longer the happy effect will last.) After this, there comes to every opium-eater the feeling that he is a victim; that he is caught in a trap from which there is no escape. It matters not how much he increases the does, it no longer brings him happiness He only takes the drug now to avoid the horrible suffering that stopping would bring and to try to keep his system in a normal condition so as to be able to do his daily work. What has brought about this change? Opium is still acting as a powerful heart-stimulant; the

brain is still full of blood; but the blood has changed. It is no longer the bright arterial blood, full of fresh oxygen and food for the brain-cells, but *venous* blood, blood whose every stimulating material has been used up by the body before it gets to the brain. Authors (like Coleridge and De Quincy), who have become victims of this habit, have written brilliantly for several years under the first influence of the drug; then, as the habit increased, they have written less and less, until finally there is complete silence.

Yet the average individual is able to keep up and does keep up his daily work after using opium for years. The large majority of physicians who come to me for treatment for this habit have left behind them a large practice, to which they have attended despite the fact that they have used opiates for years.

In using the word *soul,* I mean the higher nature of man; that part of him that makes him avoid the wrong and do the right. And in considering the effect of the continued use of opiates upon this part of man, I must vehemently protest against the statements that are made in almost every text-book that the "opium-eater is an inveterate liar, etc.; that his moral nature is so destroyed that he is an *amoral,* etc." In looking carefully over the characters of the numerous habitues that I have known, I must positively state that there were a number of them who were really *high* men. I mean by this, men far above the average in morality whom you could trust in any position; to whom you could lend money and get it back; with whom you could trust your wife, although she was somewhat gay, and get her back untouched; men who did their duty in every position in life.

It is probable that every habitue will lie about his habit; and if it is true that the average habitue will lie more than the average man, it is probably due to this fact; that it is hard for a person to lie habitually on any one subject, without the practice spreading to others.

The worst harm that the drug does to the habitual user is the hold it gets upon him. Without outside help he cannot give it up; he is the slave of a powerful monster. No one knows better than the real habitue that when the test really comes (if it ever should) that he *must* place the drug above his wife, his best friend, his father, his mother, his sister, and his brother. The agony of giving it up is so great that the drug is placed above them all.

The opiiphagist is drawn from the best class of humanity; the vast majority of them are educated men and women who have known culture and refinement. In my experience they are intellectually far above the average.

"Is it true, O Christ in Heaven, that the highest suffer most?
That the strongest wander farthest, most hopelessly are lost?
That the mark of rank in nature is capacity for pain?
That the anguish of the singer makes the sweetness of the strain?"

DISCUSSION.

Dr. George E. Pettey, Memphis—I understood the essayist to say that "some persons can take opium for a number of years with no bad effects." I think he is in error as to that. The fact that its effects may not be so apparent as to be noticed by the friends and associates of the person cannot be accepted as evidence that the drug is having no bad effect. It cannot be used habitually by any one without doing injury, both to the mind and body of the individual.

The essayist repeats, I trust inadvertently, a statement which may be found in almost every medical work in which anything about drug addiction is recorded. The statement I refer to is the effect that all opium habitues are untruthful, if not inveterate liars. This accusation does injustice to a large per cent of them, therefore I do not think it should be repeated as an accepted truth. It really is not true—I have, doubtless, had as extensive an experience with this class of patients as any man of my age, and I am quite sure that a considerable per cent of them are entirely truthful and trustworthy. It is equally true that some of them are inveterate liars, but their lying is not due to the effects of the drug, per se, but to circumstances which surround the patient.

After the addiction is established the drug is essential to the comfort and well-being of the individual, and if he must lie or even steal to get it, he will do so, but if these expedients are not forced upon him he does not resort to them by preference. He usually tries to conceal the use of the drug and will deny that fact, but he does so to protect himself from unwarranted censure and criticism. On other subjects they are usually truthful, therefore they should not be stigmatized, as a class, as inveterate liars.

Dr. W. C. Ashworth, Greensboro, N. C. (closing

the discussion)—I did not mean to convey the impression that any person could take opium without bad effects, but what I tried to point out was this, that there are certain individuals who seem to have such an immunity that they can take it for a long period of time without any apparently bad effects. I do not think they can use it with impunity.

I am glad Dr. Pettey agrees with me regarding the effect of opiates on the morals of the individual. I know the majority of opium users are not to be depended upon in regard to getting opium or in any way connected with it.

THE SURGICAL TREATMENT OF GOITER.*

By Jno. R. Wathen, M.D., F. A. C. S.,
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An immense amount of literature has been produced in recent years upon the subject of goiter, and we are now reaching a stage in our knowledge of diseases of the thyroid gland when we can base more accurate conclusions upon clinical facts as seen in operated cases. The writer's own experience, now including over 300 operated cases of goiter, covering a period of the last eight years, furnishes the data for this paper. These operations embraced two general classes, the simple and the exophthalmic, in numbers about equally divided.

Exophthalmic goiter is a condition now recognized as a result of hyperthryoidism, i. e., increased pathological activity of the thyroid gland.

As to the real cause of Graves' disease there is still some diversity of opinion, but the writer believes the real trouble begins in the thyroid gland, and the other organs, later affected, are secondary.

Although the etiology and pathology are still mooted questions, we are indeed fortunate that the diagnosis is comparatively easy, and the results of treatment by operation in well selected cases, in the hands of men of experience, are the most brilliant and gratifying of any surgical procedures. Any enlargement of the thyroid gland usually produces an accelerated pulse rate, some nervous symptoms, and the neck fullness causes a sensation of choking or smothering. It is especially in the exophthalmic type of goiter that the pulse remains greatly accelerated and the other symptoms are most prominent.

The diagnosis of the cystic types is comparatively easy, as they are usually round, protruding and generally freely movable. Some attain a very large size. Of course, exophthalmic symptoms are very liable to occur in these, and their early removal should be insisted upon as the results are good.

The large adenomatous goiters are not of frequent occurrence in this country, as are also the fibrous and calcareous varieties. Cancerous goiters are seldom met with and can usually be diagnosed if far advanced by their fixation to the surrounding structures and their stony hardness, cachexia, etc.

The most dangerous type of goiter is the exophthalmic variety. These are easy to diagnose in the late stages after all the typical symptoms have developed, and much irreparable damage has been done, but to make an early diagnosis is sometimes extremely difficult.

The earliest syptoms which would lead us to a diagnosis are mental irritability, tachycardia, vasomotor disturbances of the skin, tremor, muscular weakness, loss of weight and exophthalmos. Often the thyroid gland is so slightly enlarged that it has been overlooked by the physician treating the case, and the patient has been treated for almost every other disease except the real trouble.

What are the indications for treatment after our diagnosis has been made? They should all be given, first, rest, and by that is to be understood a real rest in the fullest sense of the term, i. e., avoidance of all excessive exercise, or excitement, and a life of quiet and ease.

It has been clearly demonstrated that iodine not only does no good, but may be very harm-

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*Read in the Section on Surgery of the Southern Medical Association, seventh annual meeting, Lexington, Ky., November 17-20, 1913.

ful, in that it may stimulate an adenomatous or cystic goiter to become the exophthalmic type. Likewise, all preparations of thyroid are contraindicated. Electricity is of no value and tends to excite an already overnervous patient.

I formerly believed that a larger percentage of these cases were cured by this treatment, but as my experience has ripened and I have had better opportunities for studying Graves' disease, I am now firmly convinced that what has occurred under nonsurgical treatment has been that the acute symptoms have subsided and we have a temporary stage of quiescence.

True, the size of the tumor has apparently disappeared, but upon operation later we are surprised that even this is not true, as what really has occurred is that the long continued pressure has absorbed the fat layers of the neck. caused an atrophy of the muscles, etc., and the tumor has sunken deeper into the folds of the neck.

This is an apparent reduction of the size, the fallacy of which I have time and time again demonstrated at the operating table, and in this connection let me say to those surgeons undertaking the operation that these cases are the most difficult of all goiters to remove and the most liable to cause the recurrent laryngeal nerve to be injured, with resultant voice paralysis. True that some cases have shown signs of improvement under medical treatment, but this has been proven to occur independent of any treatment whatsoever; in fact, they often do best if kept quiet and given no medicine at all.

Based upon a comparatively large experience, I should say that if we delay operation for several years, administering iodine and electricity until the heart muscle has undergone degeneration, albumen in the urine, enlargement and fatty degeneration of the liver, lowered blood pressure, etc., we have waited too long to attempt any radical operative measure, and these patients will generally die.

The proper time to advise operation with the expectation of a low mortality and good results is after this thyroid enlargement has begun to manifest the early symptoms of exophthalmic goiter, and has existed for several months with little or no signs of improvement.

In the selection of our patients for operation we should realize that early operation, before complications have arisen, as in appendicitis, gall stones, etc., offers the best results. Those with intermittent pulse are the most dangerous, irrespective of the pulse rate.

The removal of the thyroid gland in late cases is useless, as the real damage has been done to the other organs and it is too late to expect much repair. Likewise, the supposed cures by medicine occur only after the thyroid has exhausted itself of its poison and damaged to its limit the heart, liver, etc.

It is little short of marvelous how in a few days the heart beat will drop from 140 or more to normal. Of course, in cases of long standing with a badly damaged myocardium so great an improvement cannot be expected.

The exophthalmos usually shows a slower improvement, and the skin, hair and menstrual irregularities gradually change for the better.

The mental or morbid psychic state is the earliest to disappear. Digestion soon improves and the muscular power returns early. In cases of long standing these changes for the better are slower to make their appearance, and in the very worst cases we should expect but little improvement.

Compared with other surgical cases, the immediate and remote results of operation, in the hands of the experienced, can offer as good or better results than many other conditions, like appendicitis, etc.

All the patients operated upon by me and who left the hospital as cured, have remained as cured or greatly benefited, the latter class being, of course, the cases seen late in the progress of the disease.

No case has since died from symptoms like those of Graves' disease. In my earlier work,

and in the work of the other few doing a large number of goiter operations, there were a few cases where, when one lobe was removed, the other subsequently enlarged and required a secondary operation.

Fortunately, I have since learned the art of preventing such an occurrence, and no case in the last two years has returned for a secondary operation for this condition.

We consider our patients cured if they can undergo nervous shock like grief, worry or fright, with no more excitement than a normal individual.

My mortality has not been much over four per cent, and I have benefited all upon whom I have operated, apparently cured permanently about three-fourths, and the remainder offered relief to some extent.

Furthermore, I believe we have now almost completely mastered the greatest drawbacks to goiter operations, i. e., the injury to the recurrent laryngeal nerves and the resultant paralysis of the voice, either complete or partial paralysis. With your kind indulgence I will now exhibit lantern slides showing the technique enployed in our operations.

GALVESTON AUTOPSIES.*

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During the ten years from January 1, 1904, to January 1, 1914, there were held in the autopsy room of the Medical Department, University of Texas, at Galveston, six hundred and fifty-three post-mortem examinations. Practically all of these were performed by the head of the department of pathology, namely, Dr. A. E. Thayer, Dr. James J. Terrill, and Dr. Henry Hartman, Dr. Terrill's service covering a period of six years. Of the above number, six hundred and fourteen were on the bodies of patients dying in the charity wards of John Sealy Hospital, thirty-two were on bodies brought out by the coroner, and the remaining seven were requested by the physician in charge of the public health service. The Sealy Hospital, it should be said, is the property of the state, but is leased to the city of Galveston, with the provision that it shall be used by the medical college faculty in giving bedside and clinical instruction. It is the policy of the hospital authorities to request for the sake of its teaching value an autopsy in every case where permission for same can be obtained. As a result, forty per cent of the deaths occurring in that institution during the ten years were followed by the holding of autopsies.

The autopsy records for the period mentioned show that about twenty per cent of the subjects were of foreign birth or descent, chiefly German, Mexican and Italian. As to race, 56.5 per cent were white, and 43.3 per cent colored. The number of males was 75.6 per cent of the total, while the females comprised 24.1 per cent. The average age of these subjects, excluding eight children under ten years of age and four infants, was 42.3 years; of the males, 43.3 years, and of the females, 38.6 years. A surprising feature was the high percentage of male whites, this being 47.6; their average age was 44.7 years. The female whites were 8.8 per cent of the whole number, with an average age of 42 years. Colored male subjects came second as to number, showing a percentage of 27.7; their average age was 40.9 years. The female blacks numbered 15.7 per cent, and showed the lowest average age, namely, 37 years.

The three leading causes of death, according to the mortuary records of the hospital for the ten years, were pulmonary tuberculosis, nephritis and cardiac disease, these giving rise, respectively, to 223, 166 and 128 deaths, or a total of 517 out of the 1,510

*Revision of a paper entitled "Autopsy Findings in Galveston During a Period of Two Years," which was read before the Section of Pathology, Texas State Medical Association, May 7, 1913, at San Antonio, and published in the Texas State Journal of Medicine for September, 1913.

deaths from all causes. The autopsy records, however inasmuch as less than one-third of the tubercular cases were brought to autopsy, show the following order as to relative importance: nephritis, cardiac disease, and pulmonary tuberculosis.

Gross and microscopic examination of the kidneys revealed lesions in 540 cases. There were 351 cases of nephritis, and in about 120 of these death was due to the kidney involvement. The chronic interstitial form of inflammation was present in 135 instances, and the chronic diffuse in 122. In ten per cent of the chronic forms there was an acute exacerbation. Acute parenchymatous nephritis was met with in 66 cases, acute diffuse in 13, and acute interstitial in 5. There were 10 cases of acute purulent nephritis, chiefly of urogenic origin. Cloudy swelling occurred in 86 cases, and fatty degeneration in 36. Congestion was rather frequent, while fibrosis was occasionally met with. Chronic local tuberculosis occurred in only 5 cases. Other pathological changes, each noted in a limited number of cases, were as follows: infarcts, gummata, pyemic abscesses, hydronephrosis, pyonephrosis, metastatic calcification, amyloid degeneration, malarial pigmentation, hypernephroma, and multiple congenital cysts.

In 418 autopsies there were distinct heart lesions. This number does not include 63 cases of hypertrophy, 29 of hypertrophy and dilatation, and 20 of simple dilatation. Cardiac disease was the cause of death in approximately 90 cases, although in many of these there was also renal mischief. There were 95 cases of mitral insufficiency, but only 10 of stenosis. Mitral valvulitis, both acute and chronic, which did not materially affect the function of the valves, occurred in 17 instances. The aortic valves showed insufficiency in 24 cases and stenosis in 18, while there were 16 cases of acute and chronic inflammation that did not interfere with the opening and closing of the leaflets. Tricuspid insufficiency occurred in 18 cases, half of these being relative, and there was but one case of stenosis. There were 78 cases of cloudy swelling, 35 of fatty degeneration, and 10 of fatty invasion. Chronic interstitial myocarditis was observed in 55 cases, and brown atrophy in 20. Sero-fibrinous pericarditis was found in 12 cases, fibrino-purulent pericarditis in 5, and the chronic adhesive form in 6. The following cases were also noted: Atrophy, pyemic abscesses, secondary carcinoma, thrombosis of the cavities, stab wound, and coronary sclerosis and thrombosis.

Pathological changes in the lungs, not considering numerous instances of edema and congestion, were noted in 426 of the autopsies. There were 81 cases of tuberculosis, omitting a large number that showed latent foci. In nearly all of these cases tuberculosis was the cause of death. Chronic ulcerative pulmonary tuberculosis was the form commonly met with, and in 21 of the 54 cases had terminated in broncho-pneumonia. Primary tubercular broncho-pneumonia occurred in 12 cases, and acute caseous pneumonia in 2. There were 13 deaths from general miliary tuberculosis. Lobar pneumonia was the cause of death in 27 cases, including practically all of the fatal cases of this disease in the hospital in the ten years. Broncho-pneumonia was found in 44 cases, and pseudo-lobar pneumonia in 7. Chronic interstitial pneumonia was present in 32 cases, emphysema in 38, and gangrene in 9. Sero-fibrinous pleurisy was noted in 27 cases, and the purulent form in 13. Old apical adhesions were found in approximately one-third of the autopsies. Other processes were: infarcts, gummata, abscesses, multiple hemorrhages, bronchitis, echinococcic cyst, bronchiectasis and atelectasis.

Gastro-intestinal lesions were noted in 145 of the cases, 48 of these being chronic gastritis. Probably some lesions of the stomach were obscured by auto-digestion, especially in cases not immediately brought to autopsy. Of the 32 deaths from typhoid fever in the hospital during the ten years (mortality first five years 15.7 per cent, second five years 6.5 per cent), 18 were followed by autopsies,

these showing the usual lesions in the ileum, with occasional perforation. Tubercular ulceration of the intestines, usually secondary to involvement of the lungs, occurred in 19 cases. Acute catarrhal enteritis was noted in 22 instances, chronic ulcerative colitis in 15, and amebic ulceration of the colon in 8. There were a few instances of each of the following: acute gastritis, toxic ulceration of stomach, gastrectasia, gastroptosis, surgical removal of pylorus, pyloric stenosis, perforating ulcer of duodenum, stricture of jejunum, surgical gastro-jejunostomy and duodenal jejunostomy, fistula or ileum, toxic ulceration of ileum and colon, gangrene of caecum, and gunshot wound of intestines. In this connection should be mentioned 34 cases of acute peritonitis, largely general and arising from a wide range of causes; 6 cases of chronic diffuse peritonitis, and 8 cases of tubercular peritonitis with abundant serous exudation.

As would be expected in this class of patients, a large percentage of whom are addicted to the use of alcoholics, changes in the liver were found to be common, being observed in 446 cases. The most common trouble was perilobular cirrhosis, and in 41 of the 147 cases showing this condition the liver was markedly decreased in size. Cloudy swelling occurred in 73 cases, and fatty degeneration in 92. Fatty infiltration was present in 88 cases. Contrary to what one would expect, only 8 well marked examples of syphilitic cirrhosis were found. There were 6 cases of amebic abscess, and 3 of acute yellow atrophy. The less common affections were gummata, blastomycosis, Hodgkin's disease, echinococcic cyst, tuberculosis, pyemic abscesses, primary and secondary carcinoma, secondary endothelioma, hypernephroma, portal thrombosis, rupture and stab wound.

The spleen was involved in 337 cases, leaving out of consideration a rather large number which showed post-mortem decomposition. In one-third of these cases there was well-marked congestion. Acute splenitis was seen in 71 cases, chronic splenitis in 105, and chronic perisplenitis in 12. Interstitial hemorrhages were found in 18 cases, and large tubercular areas in 2. Other changes were edema, infarcts, gummata, pyemic abscesses, Hodgkin's disease, blastomycosis, hypernephroma, malarial pigmentation, amyloid degeneration and rupture.

Examination of the brain and cord, or of the brain alone, was made in 143 cases. There were 33 autopsies on subjects dying of cerebro-spinal meningitis of infectious origin. Of these 21 were due to the meninococcus, or, in a few instances, to the meningococcus and pneumococcus mixed, and 20 of them occurred during the epidemic of January, February and March, 1912. In these cases the organs presented variable lesions, the most constant being cloudy swelling. The pneumococcic form was present in 4 cases, the staphylococcic in 3, the tubercular in 3, and in 2 cases the etiology was not determined. Chronic serous leptomeningitis, of alcoholic origin, was found in 21 cases, and in 18 was the cause of death. There were 27 cases of spontaneous cerebral hemorrhage, the majority occurring in the optic thalami. Cerebral softening was noted in 6 cases, and cerebral abscess in 3. Edema and congestion were about equally distributed in 30 cases. Other lesions of the brain and cord were: pyemic abscesses, traumatic subdural hemorrhage, chronic ependymitis, chronic hemorrhagic pachymeningitis, chronic meningo-encephalomyelitis, and posterior sclerosis and amyotrophic lateral sclerosis of the cord.

Deaths from aneurisms had resulted in 16 cases. In 10 of these the arch of the aorta was affected; 3 of the ten had ruptured into the left bronchus, 2 into the left pleural cavity, 2 into the oesophagus, 1 into the pericardial cavity, and 2 had not ruptured, but by pressure had occluded the pulmonary vessels. There were 2 cases of aneurism of the descending aorta, one having ruptured into the left bronchus, and the other into the right pleural cavity. The remaining 4 fatal cases were due to rupture of aneurisms in the following situations:

ascending aorta and innominate artery, with rupture in each case into the right pleural cavity; celiac axis artery, with rupture into the peritoneal cavity; and the sinuses of Valsalva, with rupture into the right ventricle. In addition, aneurisms that had not ruptured were found in connection with the following vessels: arch of the aorta, 1 case; innominate artery, 2 cases; right subclavian artery, 1 case; and abdominal aorta, 2 cases.

Traumatism, chiefly from accidents, was found to be responsible for 46 deaths. Fracture of the skull, from falls or from blows, was noted in 16 cases, and in the majority of these there was subdural hemorrhage. Fracture-dislocation of the spine occurred in 4 cases, 3 being in the cervical region, and one in the dorsal, while dislocation alone was seen in 3 cases, 2 affecting the cervical vertebrae, and one the lumbar. Eight deaths were due to gunshot wounds in the following situations: head, 3 cases; neck, 2 cases; abdomen, 2 cases, and spinal cord, 1 case. Stab wounds of the heart (2 cases), left lung, liver, neck and spinal cord caused 6 deaths. There was 1 instance of rupture of the liver, spleen and left kidney, the man having been thrown from a wagon on to the street curbing. In another case, where the subject had fallen from a stepladder across the back of a chair, there was rupture of the liver. An unusual case was that of asphyxiation of a negro in a bin of wheat.

Malignant neoplasms had given rise to 38 deaths. There were 30 cases of carcinoma, distributed as follows: stomach, 12 cases; head of pancreas, rectum, urinary bladder, and ovary, of each 2 cases, and pharynx, oesophagus, lung, liver, hepatic duct, gall bladder, duodenum, caecum, parotid gland, breast and buttock, of each 1 case. Sarcoma was noted in the following regions: pituitary body, corpora quadrigemina, right shoulder and inguinal nodes. There were 2 cases of primary endothelioma, arising in the great omentum and in the pelvic nodes. Another fatal case was that of glioma of the brain.

In 11 cases death was the result of poisoning—5 from carbolic acid and 1 each from opium, oxalic acid and potassium cyanide. The character of the poison used in the 3 other fatal cases was not determined.

Pellagra claimed 4 victims, though the hospital records show that 16 patients died of this disease during the ten-year period, limited, however, to the last four years. In the 4 cases examined fibrosis was the most constant change noted in the organs. Ulceration of the stomach occurred in 2 cases.

A feature worthy of notice was the finding of a persistent thymus gland in 8 of the subjects. Of these, two, ages 9 and 15 years, had died of epidemic cerebro-spinal meningitis; one, age 20, of lobar pneumonia; one, age 22, of sarcoma of the pituitary body; one, age 38, of carbolic acid poisoning; one, age 20, of fracture of the skull from a fall; one, age 38, of subpial hemorrhage, possibly traumatic, and one, age 34, following an operation for the relief of goitre. Comprising the 8 subjects were 4 white males, 1 white female, 1 colored male, and 2 colored females.

Some rather uncommon diseases and conditions met with were as follows: Hodgkin's disease, pernicious anemia, myelogenous and lymphatic leukemia, pernicious malaria, yellow fever, purpura hemorrhagica, purulent otitis media, purulent mastoiditis, purulent thrombosis of lateral sinus, purulent frontal sinusitis, gangrenous cystitis, gangrenous vaginitis, gangrenous metritis, gangrenous endometritis, psoas abscess, subdiaphragmatic abscess, abscess of anterior mediastinum, carbuncle of neck, carbuncle of sacral region, cellulitis of hand, cellulitis of floor of mouth, cellulitis of head and face, acute suppurative arthritis of right shoulder joint and right sterno-clavicular joint, tuberculosis of hip joint, echinococcic cyst of right lung and liver, syphilitic ulceration and perforation of rectum, chloroform anesthesia, secondary hemorrhages following operations on the gall bladder and Fallopian tubes, hernia of stomach into left

pleural cavity, ovarian pregnancy, and macerated abdominal fetus with gangrenous sac.

PREVENTION OF DEAFNESS.*

By Joseph B. Greene, M.A., M.D.,
Asheville, N. C.

Preventive medicine is so much the order of the day that no apology or explanation is necessary for presenting this paper before this Association. Public health officials have done wonders in the control of infectious diseases, and in this way preventing deafness secondarily; but much more should be done solely for the preservation of hearing. The eye men have accomplished great good in the prevention of blindness by educating the public and arousing the general practitioners and midwives to the importance of the prevention of ophthalmia neonatorum, and its untoward result, blindness. The otologists likewise have a duty which they owe to the public in guarding this important sense of communication of the higher centers with the outside world. When sight is lost, as a rule, no other cerebral center is affected, but when hearing is lost, in infancy, before a vocabulary is formed, speech is also wanting, giving us the sad picture of deaf-mutism. This affection not only deprives them of means of earning a livelihood in the world, but also robs them of the social pleasures to which they are entitled. One has only to look into the face of a deaf person to appreciate the mental depression which goes with the loss of the sense of hearing.

Deafness is a relative term, and this affliction varies from what is termed "hard of hearing" to absolute deafness. Nature is so provident to us in reference to this important and delicate sense that we normally possess several times more hearing power than is required for our ordinary needs. In prehistoric times, when man had to protect himself in tribal warfare, and also from the beasts of the forest, his hearing was none too acute. This generosity in the endowment of hearing is a disadvantage in one way, for the patient's attention is seldom called to his defect till it has reached a stage where arrest of the condition is difficult, and a cure almost impossible. Hence the importance of a systematic examination of the ears not only of school children but of adults. In adults tinnitus is often the first symptom complained of, and the accompanying deafness is discovered by chance. Every aurist appreciates the unsatisfactory results attending the treatment of this condition in combination with deafness. It is much easier to prevent deafness than to cure it.

The organ of hearing may for convenience be divided into an external, middle and internal ear. For our consideration the middle ear is of the greatest importance, while the external ear is of the least importance. Permanent deafness is seldom caused by conditions in the external ear, though foreign bodies, including wax, and exostoses, may at times interfere with sound vibrations reaching the drum membrane. The middle ear contains the ossicles which form a chain of comunication between the vibrations of the tympanic membrane and the internal ear at the oval window. Connecting the middle ear with the naso-pharynx is the Eustachian tube. This tube serves to drain and ventilate the middle ear, and is normally opened in the act of swallowing by the automatic contraction of certain small palatal muscles. Anything which interferes with the entrance of air into the middle ear has a harmful effect on the structures in that region. Hence the well known law: "Anything that interferes with the normal tension existing between the membrana-tympani, ossicles, and the contents of the oval window, will cause tinnitus and deafness."

The internal ear or labyrinth consists of the cochlea, vestibule and semi-circular canals. It is concerned in both audition and equilibrium. The internal ear is so delicate that nature has placed it within the hard substance of the

*Read in Section on Ophthalmology, Rhinology, Otology and Laryngology of the Southern Medical Association, seventh annual meeting, Lexington, Ky., November 17-20, 1913.

petrous bone to better protect it from external injuries. It is still exposed to systemic poisons in the circulation, as in syphilis and quinine. On account of its proximity to the middle ear and meninges, suppuration in these regions readily extends to the labyrinth and gives us "nerve deafness," the most hopeless form of deafness.

For the purpose of this paper it seems advisable to divide all deafness into two forms, congenital and acquired. Many cases which were formerly classed as congenital are now known to have been acquired in infancy. Sheppegrell, in his careful investigation of the subject, reached the conclusion that one-third of the cases of deafness are congenital and the other two-thirds acquired.

From a preventive standpoint, the acquired ones are of the greatest importance, for it is here that the general practitioner and special practitioner can, by working hand in hand, render the greatest service to mankind. To my mind there is no one cause so productive of defective hearing in children as adenoids. This lymphoid structure is situated, as you well know, on the vault of the pharynx, in close proximity to the mouths of the Eustachian tubes. They not only prevent ventilation of the tube and ear, but also, when inflamed, become a fruitful source of infection, which readily extends along the tube to the middle ear, giving us an attack of acute otitis media. The passage of bacteria to the middle ear is especially easy in infancy on account of the shortness of the tube and its relatively large size. This inflammation, if not arrested, may not only extend to the mastoid cells, but may also involve the internal ear or the meninges of the brain. It not only endangers the organ of hearing, but endangers life. Ballinger was not far wrong when he said 66 per cent of middle ear diseases are due to adenoids. It is not necessary for adenoids to cause mouth breathing, though they usually do, if carefully inquired into, but they are harmful on account of their harboring infection and preventing ventilation and drainage of the Eustachian tube and middle ear. The operation of adenoid removal is so nearly free from danger that we should advise it on the slightest symptoms. General practitioners at times are a bit prone to wait for the symptoms of mouth breathing before taking steps for their removal. This is only one symptom of harmful adenoids, and is not the most important. The ears can be seriously and permanently damaged when the adenoid is so situated as to infect the middle ear or prevent its ventilation, without the common symptom of mouth breathing. In the removal of some of the largest adenoids by the author, mouth breathing was not a symptom.

The appearance of the ear drum in this condition is so characteristic as to well deserve the description, "Adenoid Ear." Diseased tonsils harbor infection, and likewise cause obstruction of the tube by pressure of the upper lobe of the tonsil, and must be thoroughly removed. Other important causes of acquired deafness are the acute exanthemata, scarlet fever and measles heading the list. Smallpox in times past was a fruitful source of deafness, but, thanks to preventive medicine, vaccination, it claims few victims at the present time. Typhoid fever and diphtheria are also better treated and controlled, to the saving of many organs of hearing. In all the acute exanthemata, particularly in children, the ears should be regularly inspected, and when the condition requires it, the drum membrane should be fully incised to permit drainage. It is most unfortunate when the first symptom of acute otitis media noted by the family physician is a running ear. Not only permanent damage to the organ of hearing, but also mastoiditis and meningitis may be prevented by timely incision of a drum membrane. Another mistake that is sometimes made is in ignoring a running ear in the delusion that the patient will *outgrow* it. In this connection it might be mentioned that no first-class life insurance company will take the risk of insuring a patient with a running ear. In speaking of otitis media in connection with

the acute infectious diseases, it is now a settled fact that the ear complications are far less frequent and less severe when the patient is rid of his adenoids. The writer, about a year ago, removed the adenoids from a boy of six, who had the night before, for the first time, been exposed to measles. The child eight days after operation came down with measles, but during his illness had no ear complications, not even a slight earache. This prophylactic measure is not advised as routine, but is suitable in certain cases of definite exposure to measles and scarlet fever.

Influenza, pneumonia and whooping-cough may cause deafness through infection of the middle ear. The only prophylaxis is incision of the drum membrane at the right time.

Meningitis may cause deafness of the worst kind, usually through infection of the internal ear from the meninges. In the cerebro-spinal type of this disease, Flexner's Serum should be used promptly.

Tuberculosis of the middle ear, which we so frequently have in our city, is very difficult to prevent or cure. Mumps cause deafness by attacking the internal ear. It is very serious, but, fortunately, this complication is rare. Such drugs as quinine and the salicylates, including aspirin, should be given with caution, as *excessive* doses may produce a form of nerve deafness.

Syphilis may cause deafness by involving the nerve or labyrinth in the early stage of the disease, or it may occur late in the disease. It is also a cause of congenital deafness; at least the inherited deafness occurring during infancy or childhood. The preventive measure is salvarsan, or neo-salvarsan, followed by mercury and the iodides, controlled by the Wasserman reaction. Some excellent authorities speak of the harmful effect of salvarsan on the already affected auditory nerve, but the weight of evidence is in favor of its use as less dangerous than the spirocheta-pallida.

There is another form of deafness occurring particularly in adults, known as dry catarrh of the middle ear. It is often accompanied by ringing and noise in one or both ears. Unfortunately when these symptoms appear the disease is already well advanced. This condition of the ear is often associated with so-called catarrh of the nose, caused by a nasal obstruction, due to a deflected septum or enlarged turbinates. The ear lesion is so frequently on the obstructed side that it can hardly be a mere coincidence. The removal of the cause is surgical, though we should not be too optimistic in our promises to relieve the ear condition. We can sometimes improve the ear symptoms, and frequently arrest the progress of the disease. It would have been far better had normal respiration been previously established and this unfortunate train of symptoms prevented.

The entrance of water into the middle ear through the use of a nasal douche, or in the act of swimming or diving, is most harmful to the organ of hearing by causing acute otitis media. So potent for evil is the nasal douche in the hands of patients that in my judgment it should be very exceptionally prescribed. Patients should also be cautioned as to the danger of the entrance of water into the middle ear. Particularly is this the case in sea bathing, where the strong salt water seems most irritating.

Finally, I shall take up congenital deafness, which offers to the physician a less promising field in the way of prevention. Mac-Kuen estimates that more than 50 per cent of the cases of congenital deafness are due to consanguineous and deaf-mute marriages. This being the case, physicians should strongly advise against such unions. It may be necessary in the future for laws to be passed to prevent such marriages. In the absence of such a law, the two sexes should not be brought together at our deaf and dumb institutions during the marriageable age.

I wish to emphasize in conclusion the following facts:

1. Deafness is largely preventable, but is difficult to cure when well established.

2. The most fruitful cause of deafness is

the presence of adenoids, which should be removed without waiting for the symptoms of "mouth breathing."

3. The presence of adenoids complicates the infectious diseases and increases the danger of ear infections.

4. In acute inflammations of the middle ear the drum membrane should be early and freely incised, and running ears should not be neglected.

5. Congenital deafness is due principally to consanguineous and deaf-mute marriages. This should be discouraged by the physician, and if necessary, prohibited by law.

DISCUSSION.

Dudley S. Reynolds, Louisville, Ky.—I thought I understood the essayist to say quinine and aspirin in speaking of deafness.

Dr. Greene: In excessive doses.

Dr. Reynolds: I want to say a word about the salvarsan treatment. Is it a cure of syphilis? I have seen a score of cases of relapses. It may have some value in some stages of syphilitic affections, possibly curative in the earlier stages; it is not curative in the advanced stages. I have seen so many cases of syphilis in persons who had used salvarsan that I have lost confidence in it. I have had occasion to know something about syphilis. I had the good fortune to take instruction with Fournier and Cornil, of Paris.

As to syphilis in all its stages, and especially if chronic, the records there are so great as to establish rules and principles in pathology and therapeutics.

I feel sure there is no known method by which syphilis can be cured, in the sense of being stamped out from the human system. Many gentlemen in the profession believe mercury is an antidote to syphilis, an absolute cure. They have only to have a little experience in practice to find how fallacious that is. One of my neighbors with a pretty large practice, not especially in syphilitic diseases, but in neurotic people, believes there is no scientific place for iodide of potassium. That shows he does not see cases of syphilis in the mucous membrane or in the skin. I do not know anything that melts away quicker than an ulcer of the pharynx in syphilitic patients treated with iodides. Some may take iodide of sodium, others the iodide of strontium, others may take iodide of ammonium. The question is, since it is the iodides that do the work, if it is not better to give the hydriodic acid. Do not give your patient a concentrated preparation of iodine; you do him mischief, you make it impossible to secure the therapeutic effect desired. The old-fashioned practice of having a saturated solution and beginning with so many drops in so much water is also a very fallacious way of giving iodides. You want your iodide largely diluted with water. If you can get the patient to take it in a pint of water at short intervals, two or three hours, you prevent irritation of the kidneys. The reason Dr. Pope opposes the use of iodides in the treatment of syphilis is to be attributed in some measure, I think, to his unfortunate experience with large doses and concentrated preparations.

Take a half gallon of lithia water, containing half a drachm of iodide of potassium, and have him take a large glassful every two hours.

Have Horlick's malted milk or fresh cow's milk taken after each dose of the medicine to prevent the bad taste and sometimes the nausea.

Concentrated solutions of iodides are to be avoided in all cases. Nothing is more important in the treatment of advanced syphilis than the systematic exhibition of fluid nourishment immediately after each dose of iodides.

I would hate to try salvarsan in a debilitated subject or in cases of chronic iritis, interstitial kerstitis and in aged persons.

Wm. S. Manning, Jacksonville, Fla.—I remember some deleterious effects of salvarsan. The patient had suddenly gone deaf over night. I watched that case for three or four months. Apparently he is almost stone deaf, without any prospect of recovery. Since then I have seen other cases very nearly similar. They appeared as chronic otitis media catarrhalis. The cases appeared to have been made deaf by the salvarsan.

U. S. Bird, Tampa, Fla.—I have heard of some cases like that, while I was in Philadelphia, in which the salvarsan had the apparent effect of totally destroying the hearing. While there I was shown experiments in which white rats were used. It was proved by a long series of experiments that it had a marked selective, deleterious effect on the labyrinth. That, of course, is collateral evidence. What effect it might have on people we have yet to find out. I very much enjoyed the doctor's paper. There is one point he did not lay stress on, that is, in any case of sickness of children it is well to carefully and continuously observe the ears. Several times I have been called in, in which there was restlessness, nothing definite, a complaint of possible stomach trouble, some fever. In these cases I have found on opening the drum membrane the ears had a purulent discharge.

Richard M. Nelson, Atlanta, Ga.—As opposing what seems to be the universal experience as to the damaging effect of salvarsan on the auditory apparatus, it may be interesting to mention a case that came under my observation in which a decidedly beneficial effect was obtained. In 1911 while at the head of the eye and ear clinic, Colon Hospital, Cristobal, Canal Zone, I was called in consultation with Dr. Zeiler, the physician in charge of the medical clinic, to examine the ears of a Spanish patient in one of the medical wards. The ear drums were normal in appearance, yet the patient did not hear anyone of us, even when we almost shouted. At this distance, and after such a lapse of time, I do not recall the exact findings on functional tests with tuning forks, etc. Except that the Wassermann test having been positive and other objective signs of lues being present, the diagnosis of syphilitic involvement of the labyrinth was ventured. We felt no hesitation in giving salvarsan, feeling we could not make his

hearing any worse. A week or ten days after salvarsan administration hearing was normal.

Ehrlich himself declares that often not enough salvarsan is given; that many eye and ear or other symptoms following its administration are due not to the remedy but to the disease. More salvarsan is his recommendation in such cases. Dr. Roy, of Atlanta, in a discussion at a meeting of the American Medical Association two or three years ago mentioned the case of a medical student, referred to him after an administration of salvarsan, who not only was almost, if not quite, totally deaf as a result, but whose condition in this respect was unchanged six months and even a year later.

The foreign literature especially has abounded in the mention of such untoward effects, while, on the other hand, the experience in the case I have described is apparently almost unique.

L. A. Bize, Tampa, Fla.—I have had but two cases come under my observation where salvarsan was given where there was complete loss of hearing. The internal ear was absolutely dead. Those cases have never regained their hearing. I, as a rule, believe in salvarsan. It is not always because we give salvarsan, but because we do not give sufficient. I think the disease is worse than the remedy.

Some ten years ago, before we had the salvarsan, I had a patient with iritis. While treating him he came in with facial paralysis. I said, "Hello! what is the matter with you?" He said, "I can't hear you." Connected with the facial paralysis there was a complete paralysis of the auditory nerve. The man was totally deaf. I did not give him a very bright outlook. He seemed very much discouraged. He couldn't communicate with his friends. I suggested that he go to New York and see Dr. Whiting. He gave him the same opinion. He did not think there would be any restoration of hearing. That was ten years ago and that man is totally deaf today. I mention this to show that there are two sides to this question. Because of a possiblity of this condition developing there is no reason of not giving the remedy. I do not think papers like the doctor's can be too frequently read. The general practitioners are the ones who should hear them. They are the ones who first see the patients and tell them to go and put some sweet oil in it, or other simple remedies. The result is, when they come to the specialist it has reached a point where it is impossible to accomplish a great deal. As the eye men through the country and in societies have encouraged the prevention of ophthalmia neonatorum, I think it is in line that the same efforts be made for the prevention of deafness in children. The public should be educated along those lines, and until it is done the specialist will be up against as bad a trouble as he is today in controlling ophthalmia neonatorum.

W. Likely Simpson, Memphis, Tenn.—Along the line of prevention of deafness I would like to emphasize the good effect of early mastoid operation. There are many mastoid operations left undone or deferred to a later time because all of the typical symptoms of mastoiditis are not present. One of the main reasons for operating early is the prevention of loss of hearing.

A word or two about the use of salvarsan. A short time ago a man came into my office with a history of syphilis. Soon after the formation of the primary sore he had two doses of 606. He came to me with a history of having had tinnitus, having been dizzy and the hearing badly off five or six weeks previous. When he came to me he was getting worse and when I examined him he had no hearing in the left ear and no response to the caloric test in the left ear and an absolutely deaf ear and the turning test negative. In the right ear he had a little remnant of hearing, very slight nystagmus on turning to the left and a very little nystagmus with the cold water test. These tests were made seven or eight months after the giving of the 606. To me it's a question whether these symptoms were due to the 606 or the syphilis, but it seems to me it was probably due to the syphilis and insufficient 606. I had a talk last night with Dr. Martin, of Hot Springs, discussing this very type of cases. He is of the opinion that they are due to insufficient 606. There is no reason why we should be able to cure all of these cases with one or two doses; it may take ten or a dozen. Ehrlich and others at the International Congress at London stated that the giving of 606 had nothing to do with these internal ear troubles. Beck, of Vienna, says some of these labyrinthian affections are probably due to the 606, and has discussed this very point at length. He says the early loss of hearing a very short time after the 606 is given is very similar to the Herxheimer reaction which one may see after a large dose of mercury. The later labyrinthian symptoms are probably due to the syphilis.

Horace T. Aynsworth, Waco, Tex.—There is no doubt an early mastoid is a point we do not sufficiently emphasize. Epidemic cerebro-spinal meningitis we had as an epidemic in Texas. In giving the serum, in more than one instance, we had profound deafness immediately following the injection. Those cases, as far as I know, have not recovered their hearing. Just what the cause was and how related to the analogous action of giving 606 I do not know. In regard to the 606 in deafness, my opinion, from the reading of the literature, was like that of Dr. Simpson's statement. It was due to deficient doses rather than to the 606. Some time ago Dr. Charles E. Perkins wrote a lengthy article reviewing all the literature on this point. He said it was absolutely unproven and not to be expected that 606 was injurious at all to the ear. In that same issue E. R. Carpenter emphasized the same thing as to the eye. In talking to Dr. Martin he told me the same thing he told Dr. Simpson. The point that was particularly brought out was that Dr. J. Gordon Wilson, of Chicago, is doing the same thing in reference to white mice. He mentioned the fact that he used soamin instead of 606. It was very destructive to white mice.

There is one form of deafness that has not been touched on today, otosclerosis. We know there cannot much be done for this. A friend of mine in Texas, Foster, has been doing a little original work along this line. He assumes it is due to a deficiency in certain internal secretions, and so he has been using suprarenalin hypodermically. He gives two minims of 1:1000 solution the first day. He repeats every day, increasing the dose one drop

a day until he gets a prolonged rise of blood pressure. He claims to have treated several cases with most happy results. I do not believe he would make a mistake in his diagnosis of cases.

The paper the doctor presented is certainly a very timely one. While we all might emphasize particular points, as a whole it could not be improved upon.

J. W. Jervey, Greenville, S. C.—I did not get in to hear Dr. Greene's paper. I have looked it over with his consent. There are one or two points I would like to add. He has referred to the fact that the deafening of the ear is so often as to be very significant on the side of nasal obstruction. I think the first man who pointed this out was a Charleston man, Dr. W. P. Porcher. He became more or less of an enthusiast on the subject. He brought it to my attention, and I think the explanation of the situation is very simple. If you have an obstruction in the ear, whether a septal excrescence or a hypertrophy or what else, you have a deflection of the air current from the normal direction. The air current during the process of inspiration does not impinge normally upon the pharyngeal wall. Irritation results. The explanation is purely a mechanical one. In these cases I try to make it a rule to reestablish the normal direction of the inspiratory current. I think I have seen good results from that procedure.

In regard to the administration of drugs being followed by deafness, I had a very peculiar experience. Shortly after I first attempted to practice a specialty I was confronted, about fifteen years ago, with the case of a lady who walked into my office absolutely deaf, as deaf as a post. A cannon shot off would not have had the slightest effect on her auditory perception. And it turned out that she had been given ten grains of sulphate of quinine the night before. Before that, according to her testimony and the testimony of her family, she had perfect hearing. Nothing had occurred except the administration of ten grains of sulphate of quinine. She woke up the next morning absolutely deaf. That cannot be used as an argument against the administration of quinine where it is indicated. I remember I thought to myself: If this is a sample of the things you have to go up against, you had better go into some other specialty.

A Member. How long did that persist?

Dr. Jervey: It persisted to the present time, as far as I know.

Dr. Greene referred to the danger of sea bathing. My understanding of sea bather's ear is that it is usually an infection of the canal. It is entirely an external ear affection, causing usually a circumscribed external otitis. Those persons who have the drum membrane perforated are easily affected by the sea water, of course, for there is no physical obstruction to the entrance of the sea water into the middle ear. In one where there has been no perforation of the drum membrane I do not think it is probable that the sea water would get in the middle ear through the mouth. Sea bather's ear is the danger accompanying external otitis and not a middle ear affection, except where the middle ear is exposed through a previously existing perforation.

The most important thing is the prevention of deafness by the removal of adenoids. Dr. Greene has not gone far enough. I think I was the first man to call attention to the importance of the occurrence of pathological conditions in the fossae of Rosenmuller consequent upon the presence of adenoids. Several years ago I described the occurrence of these conditions and my method of removing them. I think that if you will all look into the nasopharynx of the patients you operate on for adenoids, unless you have taken particular pains to clear out the fossae on each side, you will find subsequent to the operation the formation of webs, like the webs of a duck's foot, fibrous bands and lymphoid processes, which interfere seriously with the working of the Eustachian tubes.

I said I was the first to call attention to the fact. On second thought I withdraw that. Eight or ten years previously it seems Dr. Wendell Phillips, in New York, had reported one case bearing on that subject. And Dr. Miles also reported one case ten or twelve years previously. After that it seemed to fall flat. I did not know of those articles at the time, anyhow.

So frequent is the formation of these fibers that I have adopted the plan of investigating every case of pharyngeal trouble that comes in my hands for that particular condition. It is very easily broken up and the results are often astonishing, even in those cases where deafness has advanced from catarrhal conditions to a point one would think he was unjustified in promising benefit. That statement is based not on one, two, three or four cases but on the experience of upwards of one thousand cases in the last seven years. So much have I been impressed with the importance of taking care of these conditions that appear in the fossae and in the Eustachian canal that I introduce my fingers and invariably break them up. Where you have the adenoid formation bound down on each side and tied to the wall of the Eustachian tube you cannot insert an instrument to remove the adenoid without pressing back the adhesions. In doing so you are forcing back the entire adenoid mass. If you put your finger there, you can remove it with one sweep. And I want to emphasize the importance, in addition to what Dr. Greene has said, of keeping the fossae of Rosenmuller clean and allowing the Eustachian canals to functionate normally.

J. B. Greene, Asheville, N. C.—In a paper of this kind it is very difficult to cover every condition, though Dr. Bird mentioned a very important one. Every case of a sick child, particularly with a fever, should have its ears examined.

With what Dr. Reynolds said about salvarsan, I cannot quite agree. I think we are all disappointed with salvarsan. At first we thought one dose would cure, then several doses, then ten or fifteen. I think it is perhaps the best treatment we have. We should not depend on it alone. I think we should follow it up with mercury and perhaps with iodides. In regard to the effect on the internal ear by the salvarsan, the concensus of opinion seems to be in favor of giving salvarsan. I do not know how we are going to determine whether it is the treatment or the disease that causes the deafness, with all due respect

to some Vienna ear men who hold it is harmful in particular cases. I do think the literature of the subject all bears me out in considering salvarsan the best treatment for syphilis.

Dr. Simpson's mentioning the operation of mastoiditis for running ears, not waiting to avoid complications, but to preserve the hearing, I think is a good point. In unskilled hands it might prove dangerous advice.

Finally, to answer Dr. Manning's question, I did have such a case as he mentioned, coming on six weeks after the salvarsan. I think it was due to the disease rather than to the salvarsan.

Finally, in regard to Dr. Jervey, I think strong salt water getting into the middle ear through the Eustachian tube is dangerous for the middle ear. I have seen patients frequently at the clinics in the Massachusetts Charitable Eye and Ear Infirmary on Mondays and Tuesdays following sea bathing on Saturday or Sunday.

I appreciate very much the generous discussion.

SOUTHERN MEDICAL NEWS (Continued from advertising page 24)

(Texas continued.)

At Benoir, March 21, Dr. J. C. Powell, formerly of Garrett's Bluff, was shot and instantly killed by a constable, while resisting arrest.

At San Angelo, March 23, Dr. A. H. Moore, aged 72, was gored to death by a Jersey bull.

At Dallas Dr. Harrison B. Cave was seriously injured by the overturning of his automobile. He was picked up unconscious, badly bruised and scalded.

The Fifth and Sixth District Medical Societies of Texas were consolidated April 3 at San Antonio, where the winter conventions will meet. Summer conventions will meet at Corpus Christi.

Dr. M. L. Graves, Professor of Medicine, University of Texas, Galveston, delivered the "Oration on Medicine" at the recent meeting of the Louisiana State Medical Association.

VIRGINIA.

The new State Board of Health appointed by the Governor for the various districts is as follows: First district, Dr. J. N. Barney, Fredericksburg; second district, Dr. Herbert Old, Norfolk; third, Dr. J. E. Warriner, Richmond; fourth, Dr. O. C. Wright, Jarratt; fifth, Dr. R. S. Martin, Stuart; sixth, Dr. John W. Preston, Roanoke; seventh, Dr. P. W. Boyd, Winchester; eighth, Dr. Lewis Holladay, Orange; ninth, Dr. W. W. Chaffin, Pulaski; tenth, Dr. Robert Glasgow, Lexington; homeopathic, Dr. H. S. Corey, Richmond; osteopathic, Dr. E. H. Shackelford, Richmond. The appointments are for four years beginning April 1.

At Roanoke the spring epidemic of measles has appeared, 158 cases having reported in March.

At Richmond, March 31, the Board of Health adopted a rule that no milk or cream shall be sold on the Richmond market except from animals which have been proven by the tuberculosis test to be free from that disease.

Dr. J. P. Jackson, who for many years has been practicing in South Norfolk, has moved to No. 352 Bute street, Norfolk.

The State Medical Examining Board of Virginia, at a session in Roanoke, issued licenses to twenty-five applicants, one of whom had graduated forty years ago. There were only two women among them.

At Richmond the State Board of Health issues a monthly bulletin of general interest. In March it published the new rules regulating barber shops. There are fourteen separate items in the law.

Dr. Herbert L. Old, of Norfolk, has been appointed assistant medical director of the Providence Life and Trust Company of Philadelphia.

At Tazewell the board of health, together with the city council, ordered all schools, churches, picture shows or public assemblies of any character to be closed, and that all children under the age of fourteen be kept off the streets and away from public assemblages. It also ordered all physicians to report cases of scarletina to the board as soon as discovered.

WEST VIRGINIA.

Dr. W. A. Adams, of Lauckport, a suburb of Parkersburg, suffered a broken leg and severe bruises by being thrown from his horse. The animal stepped into a hole in a culvert and suddenly pitched forward.

At Wheeling the officers of the U. S. Public Health Service have established offices and are investigating into the pollution of the Ohio river at Cairo, Pittsburgh and points between.

At Wheeling Dr. A. Taylor was arrested on a warrant sworn out by Dr. S. L. Jepson, secretary of the State Board of Health, charging him with practicing without a license. He is said to be what is called a "faith doctor."

At Charleston Dr. O. L. Aultz, city health officer, has notified all physicians that action will be taken at once against any one who attends cases of cerebro-spinal meningitis and fails to report them to him in order that steps may be taken to prevent a serious epidemic. Several deaths have resulted from the disease during April.

At Elkins, March 19, the health car which has been transported free over the trunk lines of the state with a health exhibit, was taken off of the road, as it can no longer secure free transportation.

At Charleston Dr. Aultz has complained of several different merchants for exposing overripe bananas for sale, and in each instance a fine of five dollars was assessed, the culprit being at the same time informed that a repetition of the offense would cost him $25.

On May 6 the school of instruction for health officers began work at Charleston. The law makes it the duty of every health officer in the state to attend, and their respective county or city must pay the expenses.

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Next Meeting, Richmond, Va., Nov. 9, 10, 11, 12, 1914.

THE BATTLE CREEK IDEA.

A waiting world may now rejoice. A great brain, that of Dr. J. H. Kellogg, has conceived, brought forth, nourished, and reared to maturity an Idea. He names it "The Battle Creek Idea." Described, defined or analyzed, it seems to be simply: To use every available means to unite in one sentiment of approval, admiration and patronage, the faith of both laymen and doctors in the infallibility of Dr. J. H. Kellogg and his overgrown resort at Battle Creek. To this end he publishes a beautiful periodical which is intended to make all other sanitaria look like shadows on the wall, and which is adroitly constructed to appeal to credulous doctors through a veil of pseudo-scientific-semi-technical phrases, not so obscure, however, that the laymen—to whom it is also sent—cannot understand that, for instance: "An eminent clergyman" who had for five years a severe case of diabetes and was "passing from his body three and a half ounces of sugar every day," came to Battle Creek, and took their treatment, and "in four or five days the sugar had entirely disappeared," and he had remained free from discharging sugar apparently ever since. Could S. S. S. or Warner's Safe Cure beat that for advertising? Of course, this is but one little illustration out of many of the Battle Creek Idea. In this connection he offers the doctors a remarkable solution of a great puzzle, the cause of diabetes.

Scientific workers have labored long and hard to discover the hidden cause of this obscure malady, but no solution has been universally accepted. They might have saved themselves the trouble. Dr. J. H. Kellogg has now told the whole world of science, the laity included, the true etiological cause of diabetes, couched in technical terms delicious to enunciate and convincing to hear. It is, he says, *auto-intoxication!* And auto-intoxication is caused by eating "animal protein," and the cure is to go to Battle Creek, take its treatment, and eat Battle Creek protein. See? Dr. Kellogg has no use for the "floor of the fourth

ventricle" theory, or any other. The Battle Creek Idea is enough, and *so* simple. And his published "address" to the doctors, including the laity, rings in the perils of protein and anaphylaxis beautifully. Better not let any ordinary doctors meddle with such dangerous stuff, dietary or financial. The only protein that is safe is Battle Creek protein.

In fact, the whole gorgeous front is a cunning advertisement to the laity disguised in the garb of education, and carefully contrived to also interest credulous doctors, and to secure from them some apparent indorsement, thus condoning his glaring sins against the rules of ethics by which all reputable physicians are supposed to be guided. Humbug the doctors first, then the people will follow.

In a word, the Battle Creek Idea is: First, to make money; second, to make more money; third, to make still more money, and so on *ad infinitum*.

That is the Idea. The motto is: Ethics be d—d, so that we get patients to spend their money on Battle Creek. Yet few of our medical journals today have the courage to protect the interests of their other and ethical advertisers of sanatoria by excluding from their pages the huge, catchy plates of this piratical intruder into their class. Perhaps the managers of this JOURNAL made a mistake in doing so, but the seductive copies of "The Battle Creek Idea" lying on the desk have only confirmed it in its previous opinion.

THE COST OF BAD HEALTH.

In its report for 1910-1911 the Kentucky State Board of Health estimates that the average cost of a case of typhoid fever, including medical care, nursing and medicines, is about $94. This does not include time lost, delayed efficiency, and derangement of affairs, amounting to as much more. But leaving these later items out of consideration and figuring the average cost at $94, typhoid fever and other preventable diseases annually cost Kentucky over *thirteen million dollars*, nearly double the yearly revenue of the state. This is the cost of the illness only; but counting the value of human lives at accepted standard rates the annual deaths from avoidable diseases in Kentucky amounted to $28,000,000.

In view of such tremendous obstacles to general prosperity it is no wonder that teachers and rulers in all civilized countries believe that *"the care of the public health is the first and highest duty of the statesman."*

But there is another source of public poverty everywhere present, especially in rich, alluvial regions that offer every luscious gift to mankind that soil can produce. Certain investigations made by government specialists as to the losses inflicted by malaria have produced startling figures. It was found that on the plantations being observed not less than three out of every four, or 75 per cent of the laborers, were more or less afflicted by malaria. On one plantation which was occupied by forty-six families the loss of time by the laborers, figured at current cash rates of wages, was $3,380, exclusive of medicine and doctors' fees. Then, too, the enforced idleness affected the ultimate value of the crop far more than any mere wage value, certainly equaling that loss. So that on one "bottom plantation" the loss of profit caused by malaria in one year exceeded $6,000!

All over the South this prodigious loss of income continues annually to hinder public health and general prosperity. Add all this to the losses caused by typhoid fever, hookworm and other preventable diseases and our potential but unearned wealth staggers the imagination.

Dr. L. O. Howard, of the Bureau of Entomology of the U. S. Department of Agriculture, states that from a table comprising twenty-two cities it appears that two-thirds of the deaths from malaria in the United States occur in the South.

W. E. Hinds, State Entomologist of Alabama, estimates that 2,000,000 persons in the South are annually incapacitated because of malaria. Estimating the value of their lost labor at only $100 each, one sees that product-

ive labor to the amount of two hundred million dollars is prevented by malaria alone. That amount of money spent in one year for the eradication of the breeding places of malaria-bearing mosquitoes would cause anopheles to be rare curiosities, seen only on the slides of microscopes or preserved in alcohol or celluloid for study.

Such a mosquito-free period will surely come, but not until millions more of human lives and billions of dollars have been sacrificed upon the altar of false economy.

HOW YOU CAN HELP YOUR JOURNAL.

We believe that every reader of this JOURNAL would like to do something for it. It lies in the power of every one to do a great deal for us. Can you imagine how? Just think a minute of "What can I do for the JOURNAL?" Oh, yes, tell my doctor friends what I think of it and that they ought to read it every month. Yes, that would help. But think of something else. Let us prompt you for the next answer. Read its advertising pages and trade with its advertisers. Have you read this month's advertisements yet? Did you read them last month? Do you really know all the good things put forward on our advertising pages?

Without advertisement and lots of them we could not exist. Without your patronage our advertisers would not use this JOURNAL. He uses its pages to tell you what he has that you need. See how necessary one is to the other. Why not trade with those who trade with us?

Don't forget that we have an advertising standard in some respects higher than any other medical publication. *You may depend on our advertisers.* Patronize them. Tell them you saw their advertisement in the SOUTHERN MEDICAL JOURNAL. All of us would be benefited. We get more advertising, the advertiser more patronage and you better value for your money.

PURE DRUGS AND CORRECT TECHNIC INDISPENSABLE.

The JOURNAL is in receipt of a reprint of an article by Dr. Edward H. Marsh, of Brooklyn, N. Y., which forcibly portrays the dangers that lurk in the use of impure medicine and in improper technique. It was inspired by a terrible accident occurring in the County Hospital, Los Angeles County, California.

It seems that Dr. A. T. Charlton, pathologist of the County Hospital, after consultation with members of the attending staff, directed the administration of a solution of neosalvarsan intraspinously to eight patients. Seven of these developed violent symptoms and died. Investigation revealed the following circumstances which are supposed to account for the fatal outcome. First, the drug used was not procured in the ordinary way, but was purchased as the result of an advertisement for competitive bids, the contract being awarded to the lowest bidder. In the second place, the technic instituted by Drs. Swift and Ellis, of the Rockefeller Institute for Medical Research, was not observed. The use of neosalvarsan was discouraged by them, and salvarsan, the drug of their choice, was to be introduced immediately upon solution. Dr. Charlton, on the contrary, used neosalvarsan, and of an uncertain quality, and allowed its solution to stand for twenty hours in a refrigerator before using. Now Ehrlich emphatically warns the profession against the instability of solutions of neo-salvarsan, and directs their immediate use after preparation "as they oxidise even more readily than the solutions of salvarsan." He also warns against warming neosalvarsan solutions. The technique used varied from these instructions in every respect. The lessons taught by this grewsome affair are: to beware of cheap drugs; to carefully follow the technique laid down by the acknowledged authorities who have worked out their problems patietly and practically, and to be ever on guard against any possible errors in such delicate

procedures as intravenous or intraspinous injections.

Such measures have added immensely to the practical value of internal medication, but they have also introduced new possibilities of disaster too serious to contemplate without a shudder. Pure drugs and correct technique are the only safeguards.

QUININE BY INUNCTION.

In the continual rush of new ideas and new methods one is liable to let one important matter crowd another, equally important, out of his memory, to the loss of his own efficiency. Such may easily be the fate of a method of introducing quinine into the circulation by a modified form of inunction, described by Dr. George E. Pettey, of Memphis, at the Lexington meeting of the Southern Medical Association.

He announced that though the ordinary manner of anointing the skin with quinine mixed with fats was almost useless, yet that when the vehicle used is glycerine, it is absorbed with whatever quinine it contains, with great rapidity; so that by the procedure quinine can be introduced into the circulation more quickly than by the mouth or by hypodermic or intramuscular injection. The ordinary sulphate will not answer. He uses the muriate or the bisulphate. His formula calls for quinine muriate, two dr.; warm glycerine, six dr., which makes a clear solution which the skin promptly absorbs. Two drachms, containing between thirty and forty grains, are an inunction *for an adult.* Those who have labored with quinine and lard in large, smeary dose, in infant cases, will be under many obligations to Dr. Pettey if the glycerine inunction serves them as well as it has served him.

THE HOME OF THE SAVANNAH MEDICAL SOCIETY.

The dedication at Forsyth Park, Savannah, Ga., of a permanent home all their own, by the Georgia Medical Society, of Chatham County, on March 31, 1914, was an event that every doctor who loves his profession hopes to see duplicated by many other county medical societies as the years roll by.

Nothing could more powerfully tend to arouse and sustain that condition of friendly, mutual esteem and professional self-respect that is so desirable in every organization of physicians than the consciousness of owning a home in common. And such a home! The illustration gives a fair idea of its general appearance, but not of the extensive and commodious character of the building. The society is one of the oldest in the South. It was chartered in 1804, and its library, now numbering 7,500 volumes, was founded in the same year. The new home affords every facility for professional discussion and study, as well as for personal comfort, servants' rooms and lavatory, being thoughtfully provided. Its walls are adorned with the portraits of the founders of the society, and with those of many other famous physicians who were members in

following years, and whose work was known and admired at home and abroad. Such a home for his society is an incentive to every member to be worthy of such fellowship.

It will be a fortunate day for the citizens of every county, be they laymen or professional men, when their doctors put aside all jealousy and contention and unite to build for themselves such a professional home that their great-grandchildren shall be proud to point out their protraits on its walls as those of its founders. And it can be done easily. A long, strong pull, *all together,* will surely do it, almost everywhere.

THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

Experience has taught the medical profession that in this land of general enlightenment the most efficient weapon for fighting any physical evil that threatens large numbers of people is the education of those threatened concerning the impending danger. Thus the educational campaign against tuberculosis has accomplished gratifying results. Where a few years ago the tuberculosis situation was regarded with hopeless apathy, today all over the country it is being attacked hopefully and energetically, and with remarkable success, the death rate having been reduced from 200 per 100,000 population in 1900 to 150 per 100,000 in 1912.

The outlook for the cancer patient has, in the past, been considered even more hopeless than that of the consumptive, while the truth is that almost every case can surely be cured if taken in time. And certainly its prevalence is great enough to warrant organized effort for its control! "In 1913 there were 75,000 deaths from cancer in the United States."

"Of persons who die at the age of 40 or over, one woman in eight and one man in fourteen dies of cancer." (Bulletin of A. S. C. C.) The American Society for the Control of Cancer proposes to utilize every available instrument for the enlightenment of the public on this subject. It will try to teach what are the conditions which invite cancer; how to recognize the first, painless steps of cancer growth, when and when only, it can easily be cured, and what to do about it. Lectures, circulars, newspapers and magazines will be used freely. Sources of revenue to pay expenses will be sought in addition to the present membership dues.

A managing Board of Trustees, composed of forty-two of the most capable men in the country, has been appointed. Four of these, Drs. Joseph C. Bloodgood, of Baltimore; Thos. S. Cullen, of Baltimore; Seale Harris, of Mobile, and C. Jeff Miller, of New Orleans, are Southern men, as also are two of the Vice-Presidents, Drs. Lewis S. McMurtry, of Louisville, and Lewellys F. Barker, of Baltimore. It is an effort worthy of the confidence and support of every doctor in the country.

THE SEVENTIETH ANNIVERSARY OF THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

The JOURNAL proffers sincere congratulations to the *New Orleans Medical and Surgical Journal,* whose May number completed the seventieth year of its existence. The present is a retrospective issue and is worthy of the occasion. Its editorial department is preceded by a title page which is a *fac simile* of the one under which *The New Orleans Medical Journal* made its advent into the world of medical literature on that memorable day in May, 1844.

Then comes a republication of the "Introductory Address" with which the first of its editors, Dr. E. D. Fenner, began a series of editorials that set a high standard of literary and professional workmanship. For four years he continued his service. Since then a long line of illustrious physicians have succeeded each other at the editorial desk, which, however, was never more worthily occupied than it is now by Dr. Chas. Chassaignac and Dr. Isadore Dyer.

From the beginning until now the editors have been closely associated with the hospital and medical college interests of New

Orleans. Indeed, it would be safe to assume that the pages of their journal have had much to do with building up in that city one of the greatest of all the American schools of medicine.

Estimated by years alone, the *New Orleans Medical and Surgical Journal* has long since reached the stage of maturity, but, judged by the energy and activity it displays in every line of medical endeavor, it is in the very flower of its development. It is truly seventy years young.

A CORRECTION.

To correct an error we made in our April issue, we print the following letter:

Editors Southern Medical Journal:

I notice in the April number of the Southern Medical Journal, page 341, under title of "Echoes from the Lexington Meeting," that you gave me credit for the editorial in the recent issue of the Journal of the Arkansas Medical Society. I wish, however, to call your attention to the fact that Dr. Wm. R. Bathurst is the editor who should have the credit for the nice things he has said about the Southern Medical Association, although it expresses my sentiment fully.

With best wishes, I am, yours very truly,

C. P. MERIWETHER, Secretary.

We wish to take this opportunity to express to our good friend, Dr. Bathurst, our regret for making this error and to thank him for the nice things said in his editorial. It was greatly appreciated. We trust he will overlook this error on our part. The complimentary expression in Dr. Meriwether's letter is also appreciated.

SOUTHERN ASSOCIATION OF RAILWAY SURGEONS.

Dr. Clarence H. Vaught, editor of the *Railway Surgeon*, official journal of the Kentucky State Association of Railway Surgeons, in the May issue of his journal gives editorial mention of the Southern Association of Railway Surgeons, organized at Lexington last November. We greatly appreciate this editorial of Dr. Vaught and take this opportunity to reproduce it in full:

At the regular meeting of the Southern Medical Association at Lexington, Ky., in November last, the Council recommended the organization of the Southern Association of all railway surgeons as a constituent branch of the Southern Medical Association. The meeting of this body was to precede the meeting of the regular Southern Medical Association. In other words, the Southern Association of Railway Surgeans is an auxiliary of the Southern Medical Association.

The first annual meeting of this association will be held November 9th, next, at Richmond, Va., at which time a perfect and permanent organization will be had. There are no dues for the Southern Association of Railway Surgeons and membership is limited to members of the Southern Medical Association. In other words, if you are a member of the Southern Medical Association, and at the same time a railway surgeon, you are eligible to membership in this association. The possibilities of the Southern Railway Association can but be great when there are several thousand railway surgeons in the eighteen or twenty Southern States represented, among whom we find the best and most competent men of the South.

Dr. Duncan Eve, of Nashville, Tenn., was elected by the Council as the first President of this Association. Dr. Eve is not only a splendid surgeon, but has been active in general emergency and railway surgery for many years, being one of the most prominent surgeons of the entire South, while Dr. Thomas H. Hancock, of Atlanta, Ga., another most excellent surgeon and gentleman, was elected Vice-President, and the writer of this article was made the first Secretary. He accepted this position after having satisfied himself that the Southern Railway Surgical Association could under no circumstances or in any way be detrimental to the interests of the Kentucky State Association. As is well known to you, his first love is and must remain with the last-named association. He especially wishes that just as many members of the Kentucky State as can will make application for membership in the Southern Association of Railway Surgeons, which he will be glad to receive at any time, and have such names enrolled. If you join this association during this year, or before the next meeting, you become a charter member of the Southern Association of Railway Surgeons, which, we have every reason to believe, will be one of the greatest surgical organizations of the country.

THERAPEUTICS

EMOLLIENTS.

Emollients are agents which soften or soothe the skin or irritated surfaces. They are two kinds —the oily application, and the cataplasms, or poultices. The oils principally used are Oleum Olivae or olive oil, Oleum Gossypii Seminis or cottonseed oil, Adeps Lanae or lanolin-wool fat, Adeps or lard, and Petrolatum. Petrolatum Album and Petrolatum Liquidum, the preparations of Petrolatum, are simply emollient and protective, with little tendency towards being absorbed. It does not become rancid from keeping, is neutral to acids and alkalies, and therefore is an ideal base for ointments intended for external effect alone, and which it is not desirable to have absorbed. On the other hand, it is an unsuitable ointment base for drugs which it is desired to have absorbed. Liquid Petrolatum is used as a spray for irritated conditions of the nares, larynx and upper pharynx, and may be variously medicated before application. One of the most common additions is carbolic acid, 10 grains (0.64 gm.) to the ounce (30 c.c.).

This proportion is suitable for either the solid or liquid Petrolatum, and affords a useful lubricant for sounds and similar instruments. Adeps Lanae, commonly called lanolin, is derived from the wool of sheep from which it is recovered by a patented process. It is a yellowish, pasty-looking substance, with a faint, unpleasant odor, which, however, is less in some specimens than in others.

Its peculiar properties render it extremely valuable. It is neutral to litmus and shows no reactions. Though insoluble in water it mixes with twice its weight thereof. It is unirritating to the tissues. It resists saponification. It passes through the epidermis and probably through the entire skin, carrying with it such medicines as are compounded with it in a state of solution. It can be used to eradicate wrinkles by filling out with it the affected skin surface, rubbing it in persistently. In the treatment of specific diseases, like erysipelas, where the pathogenic organisms are located in or under the skin at a salient point, it will carry to the diseased tissues whatever germicidal solution may be incorporated with it. Thus unguentum hydrargyri, resorcinum, ichthyol or other germicides dissolved in lanolin and applied directly to the diseased point, materially assist the white-uniformed guardians of the tissues, the phagocytes, in their work of destroying the invading enemies of our vitality. Combined with Oleum Gaultheriae it is a useful application to rheumatic joints. It has no superior for softening hardened surfaces, such as scleroderma, ichthyosis and the scales of impetigo contagiosa. In syphilitic conditions demanding mercury it affords a ready means for the introduction of soluble forms of drugs without troubling the digestive tract.

In cases of superficial neuralgias one part of adrenalin solution 1-1000 to ten parts of lanolin rubbed into the skin along the track of the nerve will generally relieve the pain at once. Should it fail to do so, however, the more objectionable cocaine and morphine can be just as easily sent through the skin to the seat of the pain. Two parts of cocaine by weight to sixty of the fat will make an approximately three per cent ointment. As a mere protective application it is inferior to Petrolatum.

Adeps, lard, is almost as readily absorbed as lanolin, but does not combine with as many medicaments. Combined with 2 per cent of benzoin it does not become rancid, and makes a good ointment base.

Linum, flax seed, is a valuable emollient. It is used in the form of coarse meal, slowly cooked with hot water to a jelly-like mush, which constitutes an ideal poultice. It should be applied quite warm.

Oleum Threobroma, or cacao butter, is expressed from the seed of the chocolate tree of South America. Its principal usefulness lies in the great difference in its consistency resulting from a slight change in its temperature. At 60 degrees Fahrenheit it is solid as beeswax, while at the temperature of the body it melts into an oil. On this account it is an ideal base for suppositories. Indeed it is rather too ready to melt, and is therefore generally combined with a little cerate to stiffen it. The proportions are one of cerate to five of the butter. To this mixture, while maintained at the consistency of a paste by working it on a slab over hot water, the desired medicinal agents are added to it and thoroughly intermingled; then the mass is divided into the proper number of parts and each is either moulded into the proper shape, or cast in a mould, and dropped into cold water to harden. The amount for one rectal suppository of average size is 15 grains (1.0 gm.). For children less in pro-

portion to age or size. Medicated suppositories are very useful in hemorrhoids, spermatorrhoea, dysmenorrhoea, and also for introducing general medication without irritating the stomach. Hollow suppositories, with cavities to contain medicines, are an abomination.

CATAPLASMA KAOLINI.

Kataplasma kaolini is composed of finely powdered white kaolin, or clay, compounded with glycerin, antiseptics and volatile oils.

It is composed of glycerin, kaolin, boric acid, thymol oil of gaultheria and oil of peppermint, compounded by a process requiring considerable pharmaceutical skill.

At present several manufacturing pharmacists are making satisfactory substitutes under various names.

The uses to which emplastrum kaolini are put are very numerous. Many physicians swathe the chests of their patients in it as soon as a diagnosis of pneumonia is made. It is applied to sprains, bruises, threatened boils, sore throats, enlarged glands and its usefulness, according to some, is almost unlimited so far as external applications of a soothing or remedial character are concerned. There can be no doubt that it is frequently used when the patient would do better without it. Sometimes it supplants needed and more effectual measures. Sometimes its weight is an added burden to an already embarassed respiration.

In applying it two rules should be observed, namely, it should always be warmed to more than the temperature of the body before it is spread, for afterwards it is difficult to warm it all over alike. Second, the coating on the cloth should never be less than one-eighth of an inch in thickness, or, speaking crudely, as thick as a silver dollar. Cataplasma kaolini is not a suitable application for surfaces from which the epithelium is absent, or where it is greatly irritated. It is slightly irritating itself, and would cause disagreeable burning sensations.

It is to affect the condition of tissues beneath the skin that it is properly used.

The peculiar power of glycerin to draw moisture, probably serum, from the tissues, is supposed to be the basis of the undeniable effect of emplastrum kaolini. After it has been in contact with the skin for a few hours it can be removed from the contact entire and without sticking. Its physical appearance and character is entirely changed by what it has drawn from the skin.

Glycerin destroys the life of germs by abstracting their watery elements. It is therefore used as a diluent and preservative of vaccine virus, but finally destroys the power of it, rendering it necessary for the manufacturers of vaccine to exchange old tubes for new at frequent intervals. Cotton tampons saturated with glycerin, either plain or medicated, and applied to the cervix uteri, cause a drain of serum from its tissues. Use is made of this power to accomplish desirable results. The same property causes a flow of serum in the rectum when glycerin is injected or applied in suppositories. The stimulation resulting induces free action of the bowels. Infants suffering from constipation may be relieved by small suppositories of a pure glycerin soap. It is a useful vehicle for other drugs, especially those liable to fermentation, which it prevents.

BOOK REVIEWS.

Gunshot Injuries.

By Colonel Louis A. LaGrande, U. S. Army Medical Corps (Retired). Lieutenant-Commander and Professor of Military Surgery U. S. Army Medical School, and Professor of Military Surgery, Medical Department, N. Y. University. 390 pages; 160 illustrations. Published by Wm. Wood & Co., New York, 1914. Cloth, $4.00 net.

This is an exhaustive treatise of the subject from many points of view. The author considers the various projectiles and the forces used to propel them from different arms and then the wounds produced in the different parts of the body. It is an unusually valuable addition to the literature and its appearance is timely.

SOUTHERN MEDICAL NEWS

ALABAMA.

At Ensley, Dr. J. E. Robbins has been appointed assistant city health officer

At Birmingham the smallpox situation, which has been quite serious, is now under perfect control.

Dr. Samuel Berry, of Marion, a former resident of Birmingham, died at Marion, March 16.

Dr. Edward P. Soloman and Dr. W. H. Wilder, both of Birmingham, have been appointed to succeed the late Dr. B. G. Copeland, as division surgeons for the Southern Railway.

Dr. J. J. Bogges, United States Marine Hospital Surgeon in charge of the Mobile Bay quarantine station at Ft. Morgan, has been transferred to Yokohama, Japan, to take charge of the inspection of vessels bound for the United States and its Pacific Islands.

Dr. J. F. Lancaster, formerly of Forsythe, Ga., was appointed by the Washington authorities as Quarantine and Health Officer for the Port of Mobile. His station is at Ft. Morgan, where he will examine all incoming ships from foreign ports.

At the request of Governor Hall of Louisiana, Governor O'Neal appointed two delegates to the Southern Health Officers' Conference for the Improvement of Health Conditions Among Negroes, which met in New Orleans April 24. The delegates were: Dr. W. H. Sanders, State Health Officer, and W. F. Feagin, State Superintendent of Education.

The School of Medicine of the University of Alabama, at Mobile, now requires the professor of medicine to devote his whole time to the work. The present incumbent is Dr. J. Hayes Agnew, formerly first assistant to the chair of practice in the University of Michigan.

ARKANSAS.

At Little Rock there has been much excitement on account of vivisection in the Medical Department of the University. A bloodhound belonging to the deputy sheriff was found in one of the dog pens, with a deep incision in its throat, not necessarily fatal. Arrests were made and several parties were brought before the court, charged with cruelty to animals. In spite of a biased charge from a hostile judge they were released.

At Fort Smith, March 15, Dr. C. A. Fergus, of Rogers, was elected President of the Tenth Councillor District, Arkansas Medical Association, and Dr. Clark Wood, of Fort Smith, was elected Vice-President. The district comprises seven counties.

There has been quite an outbreak of typhoid fever and measles in the vicinity of Point Cedar, Hot Springs county. In another part of the county several young men died of measles. Conditions are now under control.

Dr. Nicholas Norman, of Little Rock, was sick a few months ago and was nursed by Miss Ida Hoyt Caussey. On March 20 they were married at the Jesuit church, New Orleans. They will reside in Little Rock.

At Texarkana, April 6, Dr. W. I. Van Zandt, aged 82 years, for many years a resident of that city, died at his home on Walnut street.

FLORIDA.

At Jacksonville the State Board of Health is erecting a building for the purpose of conducting experiments and making tests on animals. The building will be modern and thoroughly equipped. It is to cost $2,200.

At Tampa it was discovered that three of the thirty-five children in the Madison Street School, apparently in perfect health, were carrying the germs of diphtheria in their throats. In other words they were "diptheria carriers," and their presence accounted for the cases of diphtheria that have been appearing from time to time.

At Jacksonville during March, 1914, there were 136 births, which is fifteen more than occurred in March, 1913. There was also a great diminution in infant mortality. On the other hand, there occurred the remarkable number of twenty-one deaths by violence. Five were homicides, one a suicide and the remainder accidental.

At Pensacola the Equitable Life Insurance Society of the United States has appointed salaried physicians from whom any of its policy-holders of three or more years' standing are authorized to receive medical examinations free of charge upon request. This arrangement also extends throughout the United States.

At Jacksonville the Infant Welfare Society has inaugurated a clinic for babies, which will be open for free service on Thursday of every week, or oftener if needed. A trained nurse of experience and many of the leading physicians of the city will serve the clinic.

The city health officials of Jacksonville are considering the advisability of instituting a thorough "rodent survey" for the extinction or diminution of rats. The possbility of infection by bubonic plague through an imported rat is the cause.

GEORGIA.

The Medical Board of Grady Hospital has asked the city authorities to pay $750,000 for an addition to the new municipal hospital wherein the physicians and surgeons of Atlanta will be able to care for their private pay patients.

The Savannah News quotes the report of the trustees of the State Sanitarium to the effect that in that institution during the year 1912 the deaths from pellagra exceeded those from tuberculosis, the latter being sixteen and four-tenths per cent and the former twenty per cent of all deaths.

It is learned that Dr. Frank Nolan, of Eatonton, died on March 3 in the hospital at Tampico, Mexico. Death was from heart failure. He was physician and surgeon for a large corporation.

The Atlanta physicians are seeking to have a

(Continued on advertising page 18.)

Establish an Enviable Professional Skill in the Treatment of

Uric Acid Diathesis

gout, and other therapeutically troublesome stages of chronic rheumatism, by directing the regular use of

PLUTO WATER

in connection with the dietetic regimen.

Pluto is specifically indicated in auto-intoxication and the various forms of intestinal stagnation. Hygienically bottled.

ANALYSIS OF PLUTO CONCENTRATED
Parts per 1000

Sodium Sulphate	50.005
Magnesium Sulphate	30.971
Calcium Sulphate	2.817
Sodium Chloride	2.503
Magnesium Carbonate	.352
Iron oxid and alumina	.016
Silica	.005
Total solids	86.669

The water was excellent from a sanitary standpoint. Respectfully submitted,
The Columbus Laboratories,
January 26, 1907. **Chicago.**
Samples to Physicians upon request.

Clinical data convincingly substantiating the claims made for Pluto and delightfully descriptive of the superior advantages of America's famous Spa, supplied promptly by

FRENCH LICK SPRINGS HOTEL CO.
FRENCH LICK, INDIANA

Dependable Wassermann Tests
By the most advanced technique

(1) The Citron quantitative system, which detects the weaker positives not demonstrable by other methods. (2) The pipette method (not drop method) of measuring reagents. (3) Both Wassermann and Noguchi antigens. (4) Short cut commercial methods avoided in all our laboratory work.

Autogenous Vaccines
General Laboratory Diagnosis

Careful *personal* attention to technique. Suitable containers furnished.

F.O. TONNEY, M.D. S.S. GRAVES, M.D.
32 North State Street, Chicago

THE WUNDERTRUSS
and special appliances for
Hernia and Prolapsed Viscera

Abdominal Supporters, Elastic Hosiery and Surgical Corsets. **DOCTOR, send for our catalogue.**

HEALTH APPLIANCE CO.
136 West 34th St. New York

WASSERMANN TEST

In every complement-fixation test for syphilis made in our laboratory, we employ both the original Wassermann sheep-hemolytic system and the Noguchi human-hemolytic system. In this way we are able more accurately to control our results so that our reports have a greatly increased value over those for which the single system is used. Our fee for this test is $10.00.

COMPLEMENT-FIXATION TEST FOR GONORRHEA	$10.00
ABDERHALDEN'S SERO-DIAGNOSIS OF PREGNANCY	10.00
ABDERHALDEN'S SERO-DIAGNOSIS OF CANCER	10.00
LANGE'S COLLOIDAL-GOLD TEST OF SPINAL FLUID	10.00
AUTOGENOUS VACCINES HAVE BEEN REDUCED TO	5.00

These auto-vaccines are put up in 20 c.c. sterile containers, which are specially designed to prevent contamination, or in 1 c.c. ampules, as you may direct.

STOCK VACCINES, $3.00 PER DOZEN AMPULES, OR $2.50 PER 10 C.C. SPECIAL CONTAINER.

We are prepared to perform all types of laboratory examinations for diagnostic purposes, and can assure you accuracy and efficiency from our staff of experienced workers in this field.

Fee-tables for all examinations and full directions for forwarding various specimens on request. Containers and culture media furnished.

CHICAGO LABORATORY

ESTABLISHED IN 1904.

8 North State Street, Chicago. **Telephones, Randolph 3610 and 3611.**

Ralph W. Webster, M.D., Ph.D. ..... Director Chemical Department
Thomas L. Dagg, M.D. ..... Director Pathological Department
C. Churchill Croy, M.D. ..... Director Bacteriological Department

MEDICAL NEWS

(Continued from page 514.)

law passed that will authorize the city council to establish a "Zone of Quiet" surrounding hospitals and sanitariums where sick persons are confined. Authors of unnecessary noises will be punished in the recorder's court by suitable fines.

The Ocmulgee County Medical Society has elected the following officers for 1914: Dr. A. A. Smith, president; Dr. R. L. Whipple, vice-president; Dr. R. G. Stone, secretary. At Savannah Dr. R. M. Grimm, of the United States Marine Hospital, with Dr. J. R. Ridlon of the same service, is engaged in the treatment and study of pellagra. The Government has appropriated $30,000 for fighting the disease at that point.

At Waycross Dr. W. M. Folks has been named temporary county physician in place of Dr. M. M. Johnson, deceased.

At the meeting of the Georgia Medical Association in Atlanta, April 17, Dr. W. B. Hardman, of Commerce, was elected president; Dr. H. J. Williams was elected vice-president; Dr. Patterson, second vice-president, and Dr. W. C. Lyle, of Augusta, secretary-treasurer.

Tuesday, April 14, the State Board of Health, with all members present save one, voted unanimously not to recognize the Southern College of Medicine and Surgery, and placed the Georgia College of Eclectic Medicine and Surgery on probation. They fell below the standard fixed in the medical practice act passed last year. Dr. C. W. Miller, of Atlanta, secretary of the defunct eclectic examining board, was reported to the State Board for selling licenses to practice medicine without requiring any examination.

Deaths—Dr. James Perrin Smith, of Augusta; Dr. J. Scott Todd, of Atlanta, ex-president of the Georgia Medical Association; Dr. Marvin M. Johnson, of Waycross.

On March 31 the Georgia Medical Society of Chatham County dedicated their hall, which they have purchased and remodeled, at Forsyth Park, Savannah. The establishment is complete, with storage rooms, meeting hall elegantly furnished, cloak room, library of 7,500 books, lavatory, etc.

At a meeting of the Campbell County Medical Society, held on the 9th of April at Fairburn, the following officers were elected: Dr. J. T. Longino, president; Dr. C. S. Merriam, vice-president; Dr. R. T. Camp, secretary and treasurer. Drs. W. R. Camp, C. H. Harvey and L. M. Hobgood constitute the board of censors.

KENTUCKY.

At Elkton Dr. Willis Edward Lowry and Dr. Agnes Steffiam, both of Laredo, Texas, were married.

At Bowling Green a city mail carrier, Rufus Landers, developed a case of smallpox and was removed at once to the eruptive hospital three miles from the city.

At Prestonia, three miles from Louisville, it was discovered that several school children who were supposed to have chickenpox in reality had smallpox; consequently the contagion was widely distributed.

The City Health Department, of Louisville, is determined to enforce the ordinance prohibiting the selling of meat on the sidewalks, and the meat dealers are equally determined that they will not obey the ordinance. Several arrests have been made and fines awarded, the same being appealed in every instance.

During April the city of Paducah suffered from a widespread epidemic of measles. Most of the cases were among children. On account of ill health Dr. W. H. Parsons resigned his position as city physician, and his partner, Dr. Walter A. Lackey was elected to fill out the unexpired term. Dr. Parsons expects to return to Paducah as soon as he regains his health.

In Louisville during the month of March 110 cases of smallpox developed. The City Health Officer urged vaccination on all citizens and notified the public that, "There is a law in the State of Kentucky and the city of Louisville requiring every citizen to be successfully vaccinated.

At Louisville an alalysis of milk supplied by a dairyman named Ulrich showed that it contained bacteria to the number of 6,800,000 to the cubic centimetre. The smallest number were found in a sample from the dairy of J. L. Shallcross, which showed only 600 to the c.c.

At Henderson there were fifteen cases of scarlet fever in March and the City Health Officer, Dr. Griffin, instituted strict quarantine measures and controlled it.

Deaths—Dr. Abel Brown Applegate, aged 65, died at West Point, April 1; Dr. J. A. Jones, aged 76, died at Calvert City, April 11.

On June 22 and 23 the American Proctologic Society will meet at Atlantic City, N. J. Dr. Jos. M. Mathews, of Louisville, Ky., is president. Several other Southern men are active fellows of the society—Drs. Samuel T. Earle and Arthur Hebb, of Baltimore; Dr. Granville S. Haynes, Louisville, Ky.; Dr. John L. Jelks, Memphis, Tenn., and Dr. Thomas C. Martin, Washington, D. C. Dr. E. H. Terrell, Richmond, Va., is an associate fellow.

LOUISIANA.

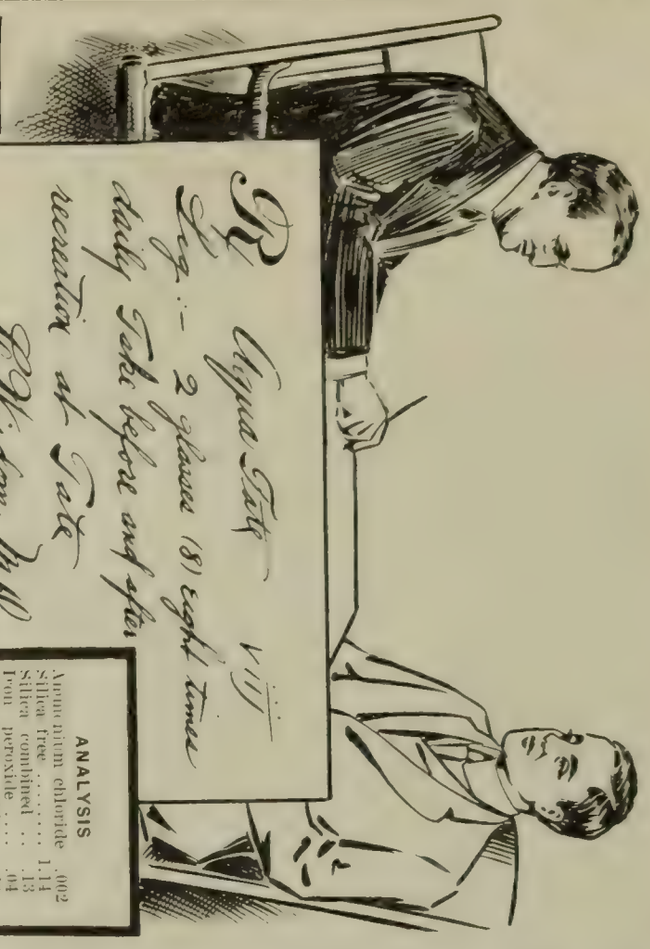
Dr. Dowling, president of the State Board of Health, has directed the local health board and police at Oak Grove that a quarantine against same must be established to prevent the spread of hog cholera.

At Sorento there was quite an excitement in March after the visit of Health Officer Hall T. Thibodeaux, who declared an epidemic of spinal meningitis. Many left town.

The public schools at Spider, Cook, Rambi, Grove Hill, and Bell Bowers, in DeSoto Parish, were closed during March by Superintendent G. O. Houston, because parents refused to permit their children to be vaccinated as ordered by the state health authorities. Within the parish there were 1,525 pupils vaccinated and 530 refusals to submit.

At Lafayette the Parish Medical Society elected the following-named officers for 1914: Dr. J. L. Chiasson, president; Dr. George L. DeLaureal, vice-president; Dr. M. E. Saucier, secretary-treasurer.

(Continued on advertising page 20.)



That's the one prescription that is *transferable*, the only prescription that is good for everybody—you and your family, your patients and their families. No matter what the diagnosis—neurasthenia or just plain "nerves": dyspesia or just plain "grouch"—Tate Spring water is the prescription.

TATE SPRING WATER

Tate water, we sincere'y believe, is the most remarkab'e stomach water in this country. Won't you write for booklet giving rates and telling about the wonders of Tate Spring and Tate Spring water?

TATE SPRING HOTEL TATE SPRING, TENN.

ANALYSIS

Ammonium chloride	.002
Silica free	1.14
Silica combined	.13
Iron peroxide	.04
Aluminum oxide	.20
Calcium sulphate	76.54
Calcium carbonate	21.50
Magnesium sulphate	35.28
Sodium sulphate	4.10
Sodium chloride	.13
Sodium nitrate	.02
Potassium chloride	.00
Lithium chloride	.04
Calcium phosphate	.03

PRICES

F. O. B. Tate, Tenn.

Case 1 doz. 1-2 gallon bottles	$3.00
Demijohn (glass) 5 gallons	2.50
Barrel, 30 gallons	5.00
1-2 Barrel, 17 gallons	3.50

$1.00 credit for glass vessels returned for refilling. Bill of Lading is mailed showing freight paid. Terms, Cash.

FRIES BROS., 92 Reade St., N. Y.

Manufacturers of

"KELENE"

(PURE CHLORIDE OF ETHYL)

?

SEE NEXT ISSUE OF THIS JOURNAL

MEDICAL NEWS

(Continued from advertising page 18.)

The following named gentlemen have been awarded gold medals for distinguished service to humanity, by the National Institute of Social Science at its annual meeting in New York, March 20. Dr. Abraham L. Metz, Dr. Charles C. Bass and Dr. Charles W. Duvalle, all of Tulane University medical faculty. Dr. Metz was also elected a vice-president of the institute.

At Crowley Judge Wm. Campbell gave a decision against Adriople Theodore, of Opelousas, in his suit against Dr. E. M. Ellis for $35,500. The doctor got judgment for his fees and costs. Theodore had sued him for malpractice.

The Alexandria Chamber of Commerce has elected for its head Dr. W. D. Haas.

Shreveport is rejoicing over the fact that microscopic examination of blood smears from over two hundred children of the high school failed to find a single malarial parasite. The examinations were made by officers of the U. S. Public Health Service and are undoubtedly reliable.

The State Board of Health, under the leadership of Dr. Dowling, has mapped out a regular campaign in the interest of the health of the negro. Public meetings, lectures, moving picture exhibits and various inspections of premises in different localities are being conducted for the purpose.

At New Orleans Dr. O'Reilly, of the City Board of Health, having learned that certain dairymen were using brewery mash for feed for their cows, sent a communication warning them that if the mash was found on their premises their permits would be revoked and an affidavit issued against them.

Surgeon J. H. White, of the U. S. P. H. and M. H. Service, who has been stationed in New Orleans ever since 1905, has been given a year's leave of absence, to enable him to take up some important work for the Rockefeller Commission.

MARYLAND.

The Baltimore News publishes a statement dated March 29 that a nine-months-old child of Mr. and Mrs. Herman Kane, of Gettysburg, Pa., had had its sight restored by grafting the cornea from the eye of a pig to the eyeball of the child. The operation was performed at the Eye and Ear Hospital at Baltimore. No further report has been received.

The Baltimore Sun publishes from the bulletin issued by the Rockefeller Institute of New York City as follows: "The Institute is now prepared to treat patients suffering from acute lobar pneumonia with specific anti-pneumococcus sera. The results so far obtained indicate that the proper use of this method is efficient in lowering the mortality from this disease." The Baltimore physicians consider the discovery as valuable as that of diphtheria anti-toxin.

Dr. Herbert Harlan, president of the Maryland Board of Medical Examiners, says that he has evidence that will invalidate the licenses of quite a number of physicians now practicing in this city and the state. It is said that they secured lists of the questions before the examination, at prices ranging from $25 to $300. It is rumored that some of the accused have been making attempts to intimidate possible witnesses against them. The doctors involved are said to be of foreign birth. The questions were those used in the examinations held in June and December, 1912.

MISSISSIPPI.

At Jackson two negroes taking the examinations by the State Pharmaceutical Board, were discovered cheating and told to leave the hall and not return.

Dr. L. S. Rogers, of Holmes County, has been appointed State Superintendent of the State Charity Hospital in Jackson, to succeed Dr. L. H. McLean.

The Board of Trustees of the Mississippi State Penitentiary has elected Dr. R. L. Hagerman, of Jackson, as physician to succeed Dr. Neal on the Oakley prison farm.

On March 27 the Clay-Lowndes-Oktibbeha Medical Association met in West Point at the city hall. Dr. S. S. Thomas of West Point presided. West Point was designated as the permanent meeting place of the association hereafter.

Dr. J. H. Stone, County Health Officer of Itawamba county, whose home is at Smithville, has been removed from his position by the State Board of Health, the charge being that he violated his contract by failing to reply to letters written by Secretary E. H. Galloway, of the board. Dr. W. N. Reed, of Fulton, was appointed to succeed him.

Before adjourning at Columbus the State Medical Association reconsidered the vote by which Jackson had been agreed on as the meeting place for 1915, and voted for Hattiesburg instead by a decisive majority.

At Vicksburg, March 24, Dr. A. O. Hardenstein died at the Presbyterian Hospital one week after an operation had been performed for disease of the stomach.

At Pascagoula, April 7, Dr. B. F. Duke, aged 71, died. As a Confederate soldier he fought in seven great battles and surrendered with his regiment at Appomattox.

NORTH CAROLINA.

In Greene county the prevalence of smallpox has necessitated the closing of the public schools. For lack of precautions the epidemic was widespread, not even respecting the leading families.

At Durham the Liggett & Meyers Company, the great tobacco firm, vaccinated 200 of its colored employes without charge.

At Wilmington Dr. Joseph Akerman has been appointed superintendent of the James Walker Memorial Hospital, succeeding Dr. J. W. Hooper, recently resigned.

At Newburn, late in March, Conductor J. B. Davis, of the Norfolk Southern Railroad, developed a pronounced case of smallpox. The cars in which he rode were thoroughly fumigated.

Dr. L. B. McBrayer, of Salisbury, has been appointed superintendent and medical director of the State Tuberculosis Sanitarium at Aberdeen.

At Asheville Dr. F. J. Clemenger has resigned

(Continued on advertising page 22.)

VAGINAL ANTISEPSIS

IS COMPLETELY SECURED THROUGH THE EMPLOYMENT OF

"ASEPTIKONS"

(FORMERLY KNOWN AS CHINOSOL COMP. VAGINAL SUPPOSITORIES)

These suppositories are indicated in cervicitis, leucorrhea, specific and non-specific vulvo-vaginitis and in all cases where complete vaginal antisepsis is desired.

NON TOXIC, NON IRRITATING, NO DAMAGE TO MEMBRANES.
YET A MORE POWERFUL ANTISEPTIC THAN BICHLORIDE

Chinosol--Tablets and Powder
Full Literature on Request

CHINOSOL CO.

PARMELE PHARMACAL CO.
SELLING AGT.
54 SOUTH ST., N. Y.

The Leucodescent Therapeutic Lamp

is the standard apparatus for the therapeutic application of light energy. It can be used with surprisingly satisfactory results in more than three-fourths of the cases that occur in a general medical practice.

One physician says of the Leucodescent: "It will make you more friends than any other apparatus you can install in your office."

Let us tell you our plan by which you can install the Leucodescent now without increasing your present expense. Send for our booklet No. 9 and you will receive more data on light therapy than can be found in all text-books combined.

The Leucodescent Lamp Co.
P. O. Box 258 Chicago, Ill.

What We Do

Everything that a fully equipped chemical, bacteriological and medical laboratory should be able to do.

WASSERMANN TEST,	$5.00
Urinalysis, complete - -	$1.50
Sputum and Smears - -	$1.00
Gastric contents, complete - -	$3.50
Tissues, pathologicai examination -	$5.00
Autogenous vaccines - -	$5.00

Fees for other work on application and in keeping with the above low prices. Send for our fee table.

Accurate Dependable
Quick Results

Accuracy Laboratories
1724 and 1726 West Madison St.
CHICAGO, ILL.

MEDICAL NEWS

(Continued from advertising page 20.)

his position as a member of the city board of health and Dr. A. W. Calloway was elected in his place.

At Henderson a man supposed to be named Walden committed suicide at a hotel. He left a note requesting that his body be sent to the Medical College at Atlanta.

At Greensboro, April 17, Dr. J. R. Reitzel, of High Point, was instantly killed in an automobile accident.

OKLAHOMA.

At Oklahoma City Dr. A. E. Davenport, who was suing the county for $375 salary, was awarded $353. An unusual feature was that the doctor was the only witness employed in the case, serving both sides alike. He was on the stand eight hours.

The Woods County Medical Association met at Alva and elected the following named officers for 1914: Dr. R. Z. Linney, Hopeton, president; Dr. C. T. White, Alva, vice-president; Dr. O. R. Gregg, Alva, secretary.

At Muskogee the physicians of the city have arranged to deliver a series of lectures on civic cleanliness and general sanitation to the Housewives' League at the rooms of the Commercial Club.

At McAlester his fellow citizens made an occasion of the seventieth birthday of Dr. A. Griffin. He was one of the pioneers of the city and is a Scottish Rite Mason.

Dr. C. E. Damrell, of Enid, has moved to Tulsa, where he will locate permanently.

At Frederick Dr. J. J. Davis, of Tucumcarri, N. H., was tried and convicted on a charge of having practiced medicine in Tillman county without registering his certificate. He was fined fifty dollars.

Physicians who are applicants for appointments in the Indian service to treat Indians in Oklahoma with contagious diseases must submit to a civil service examination before receiving appointment.

The Muskogee City Hospital has been turned over to the Physicians' and Surgeons' Hospital Association of that city. A movement has been started to construct a hospital at Bartlesville.

At Oklahoma City unless a cow can pass the test provided by a veterinary surgeon the milk cannot be offered for sale. Quite a number of tubercular cows have been discovered in the various dairies. One of them was supplying milk for the dairyman's own children.

Dr. W. E. Wright of Tulsa is planning to establish in that city a medical laboratory with one of the most extensive equipments in the Southwest.

SOUTH CAROLINA.

Dr. D. Lesesne Smith, of Spartanburg, has just opened an Infants' and Children's Sanitarium at Saluda, N. C., exclusively for babies during the summer months. Saluda has an altitude of 2,200 feet with a mean summer temperature of 70 degrees.

At Greenville several lawyers visited a negro client in the city jail several times one day. The next morning they learned she had been sent to the pesthouse with smallpox. Alarm, fumigation and vaccination followed.

At Chester Dr. George H. Hennies was thrown from his buggy and severely injured by his horse running away. At last accounts he was in a serious condition.

The U. S. Public Health Service will spend $75,000 at Spartanburg for a pellagra hospital and the service it will need. It will work with the Thompson-McFadden Commission.

The Clarendon County Medical Society has elected the following named officers for 1914: Dr. H. L. Wilson, president; Dr. Thomas W. Gunter, of Paxville, vice-president; Dr. R. E. Broadway, of Davis Station, secretary-treasurer.

During the month of February, 1914, there were 144 cases of measles in Abbeville county. The citizens want a medical inspection school law.

At Florence the South Carolina State Medical Association elected the following named officers for 1914: Dr. E. F. Parker, Charleston, president; Dr. F. H. McLeod, Florence, first vice-president; Dr. B. M. Badger, Dillon, second vice-president; Dr. E. W. Carpenter, Greenville, third vice-president.

Dr. James A. Hayne, State Health Officer, has organized a county board of health for Greenville, with the understanding that they will employ an all-time county health officer. Greenville is the first county in this State to take this step.

TENNESSEE.

At St. Joseph's Hospital in Memphis a patient, William F. Allen, aged 41, a planter of Winborn, Miss., claims that he swallowed sixty grains of bichloride of mercury. As the doctors could find no symptoms of mercurial poisoning, and as none developed within twenty-four hours, they decided that he had never taken any such poison.

At Johnson City the public schools have regular medical attendants who look after the health of the children. Their eyes and teeth receive special attention. Services are donated where parents are unable to pay.

Through the remainder of the year the Associated Charities of Memphis will hold biweekly clinics for tuberculosis cases. Dr. Cummings Harris of the City Health Department has charge of the clinics.

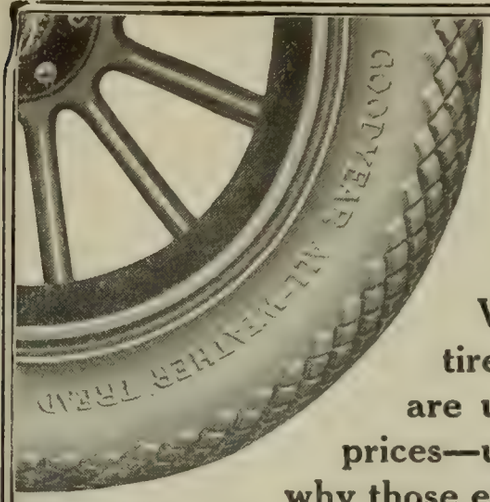
At Nashville and in Davidson County the Tuberculosis Hospital, under their joint direction, and located on the Hamilton Road four miles north of the city, is doing an extensive work. Its daily average of patients numbers fifty and most of these return to their homes after a few months, cured of the dread white plague.

Dr. James H. Atlee and Dr. James A. Smith, of Chattanooga, have gone to Europe to study the diseases of children in the great cities.

At Lonsdale the school board has decided to have medical inspection in the schools of that suburb of Knoxville. Local physicians have volunteered their services free of charge.

In Giles county throughout the month of March

(Continued on advertising page 24.)



Tire Prices
Which Appear Unjust

When tires cost more than No-Rim-Cut tires, every evidence is that those prices are unjust. Yet 16 makes sell at higher prices—up to one-half higher. Let us tell you why those extra prices mean an utter waste.

No-Rim-Cut Tires In Four Ways Excel

Note first that Goodyears—after millions of tests—hold top place in Tiredom. No other tire ever won so many users. And never before were men changing to Goodyears so fast as they are today. Our this year's increase in tire sales so far is 55 per cent.

And No-Rim-Cut tires have these four features which no price buys in any other tire:

The No-Rim-Cut feature—the only way known to build a satisfactory tire which makes rim-cutting impossible.

Our "On-Air" cure—an extra process which saves the blow-outs due to wrinkled fabric. It adds to our tire cost $1,500 daily.

Our rubber rivets—hundreds of which are formed in each tire, during vulcanization, to combat the loose tread danger.

Our All-Weather tread—a tough, double-thick tread, as smooth as a plain tread, but grasping wet roads with deep, sharp, resistless grips.

Mark that at no price does any other maker give you one of these features, which together save tire users millions of dollars.

Why We Undersell

Goodyear prices are due to matchless output, to efficient methods and to modest profits. But our tires represent—as our prestige must prove—the utmost in a tire.

Plenty of tires offer lesser quality, but none can offer greater.

GOODYEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

Any dealer will supply Goodyear tires at Goodyear prices if you tell him that you want them. And you will always use them when you test them once.

THE GOODYEAR TIRE & RUBBER COMPANY, Akron, O.

Toronto, Canada · London, England · Mexico City, Mexico

DEALERS EVERYWHERE (1570)

Branches and Agencies in 103 Principal Cities **Write Us on Anything You Want in Rubber**

MEDICAL NEWS

(Continued from advertising page 22.)

there was a widespread epidemic of smallpox in such a mild form that the patients were unaware of its nature and so did not report it.

At Chattanooga City Commissioner H. Clay Evans has announced that physicians must make prompt reports of vital statistics, including births and deaths, or be prosecuted to the extent of the law.

At Fayette Dr. H. H. Shoulders, Assistant Secretary of the State Board of Health, found a serious outbreak of smallpox when he went there to investigate conditions.

TEXAS.

At Smithville, Bastrop county, where there has been an extensive epidemic of typhoid fever, Dr. Malcolm Graham, State Bacteriologist, found the drinking water heavily infected with the typhoid bacillus. On account of the wide prevalence of the disease throughout the state the Health Department is manufacturing anti-typhoid vaccine for distribution.

At Galveston the health authorities have put in full force the quarantine regulations which will protect the port against infection by yellow fever or bubonic plague.

At Galveston City Health Officer Walter Kleberg, is vaccinating free of charge all persons who apply for such service. A building has been set apart for isolation of smallpox patients at the John Sealy Hospital.

The Dennison Medical Association elected the following named officers for 1914: Dr. D. K. Jamison, president; Dr. J. S. Stein, vice-president, and Dr. A. N. Kahn, secretary-treasurer.

At Houston over 700 persons were vaccinated for smallpox in one week. Over 4,000 have been vaccinated during the winter. The disease has invaded the police department more than once. The prevalence of chickenpox at the same time confuses matters. Such cases are now excluded from the public schools.

Austin now has an organization entitled the "Austin Health and Sanitary Association" and is composed entirely of women. They are making things move.

At Fort Worth an ordinance has been established prohibiting any institution or hospital from keeping cases of contagious diseases in any room within 25 feet of a street or alley, residence or school. Also requiring the placarding of sanitariums with such cases.

At Cuero, Dr. C. R. Mayfield of San Antonio has assumed the management of the Salome Hospital.

At Sweetwater, while en route to a point north of Roscoe to perform an operation, Dr. L. O. Dudgeon lost control of his car and it turned turtle, seriously injuring him and Mrs. Sparks, the nurse who was with him.

The Bexar County Medical Society has elected Dr. Charles W. Trueheart, formerly of Galveston, now of San Antonio, an honorary member for life. He served as officer in the army of the Confederacy.

(Continued on page 505.)

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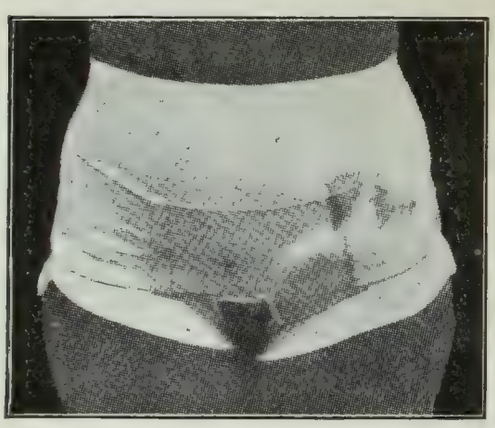

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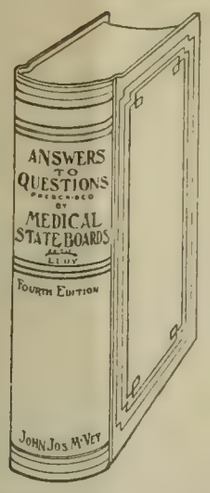

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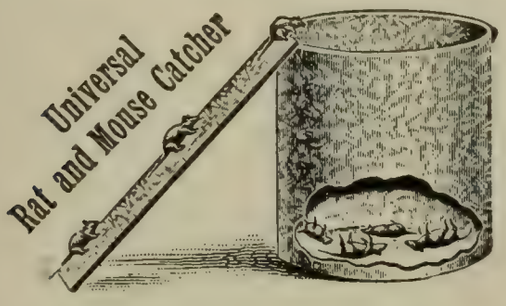

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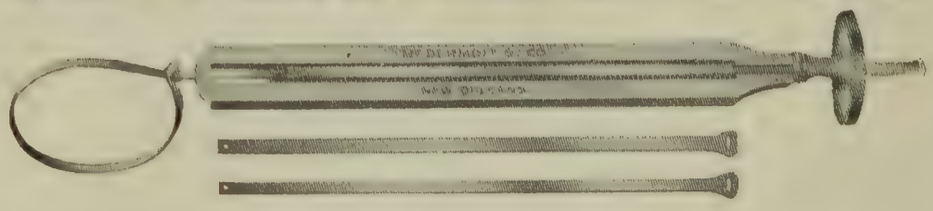

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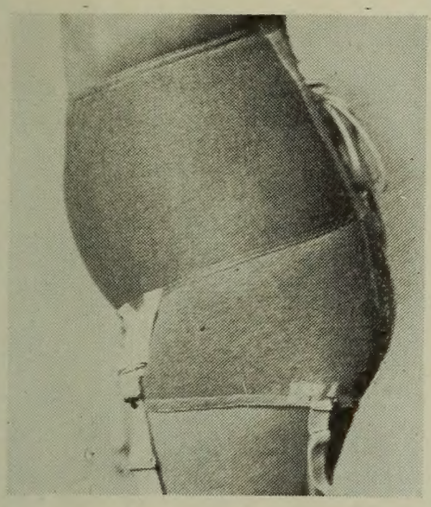

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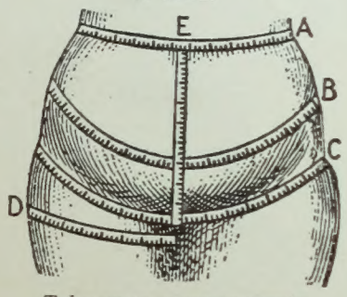

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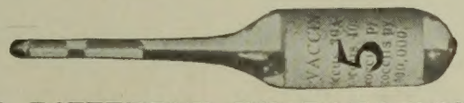

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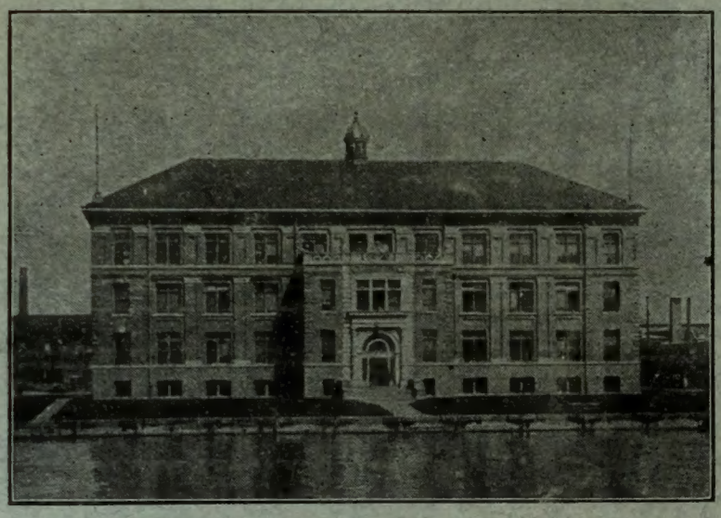

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